THE ARCHITECT & BUILDING NEWS

11 AUGUST 1955 · VOL. 208 · NO. 6 · ONE SHILLING WEEKLY

- TWO DISPLAYS FOR MESSRS. NAIRN
- HEATON PARK INLET WELL HOUSE
- ARCHITECT'S OWN OFFICE

PUBLISHED IN LONDON SINCE 1854

Monarch of all he surveys

Jim Butler's 'kingdom' is the Bristol area. His 'palace' is the Williams & Williams showroom in the M.A.C. building at Colston Street, Bristol. Being a Yorkshireman from Leeds, he's normally a quiet man—but one time he speaks right up is when he's showing it off to his customers! He gets talkative, too, on the subject of his representatives, draughtsmen, estimators and window fixers, all of whom co-operate with him in keeping customers happy throughout the Bristol area. But we haven't introduced him to you formally yet, have we? Well—shake hands with Edward Paul Butler, Williams & Williams Area Manager for Bristol. And now that you know him, why not ask him to meet you at the Colston Street Showroom and let him take you round? He'll enjoy putting on his peaked cap to give you a Guided Tour—and you might get something useful out of it too!

OUR BRISTOL SHOWROOMS Architects and builders who want to see Williams & Williams products will see them all in the M.A.C. building, Colston Street. Mr. Butler will be proud to show you round.

* MR. E. P. BUTLER, *Williams & Williams (South Western) Limited, 6A Priory Road, Tyndall's Park, Bristol* 8 *Bristol* 38907.

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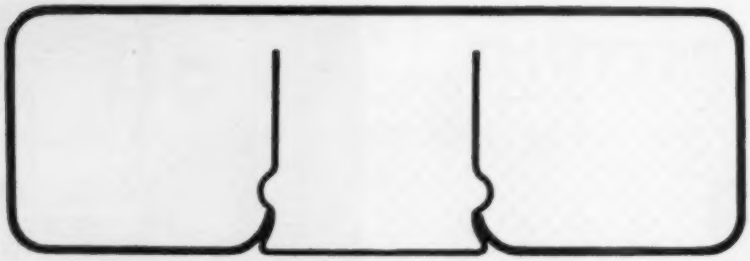
METAL WINDOWS **WILLIAMS & WILLIAMS** *Member of the Metal Window Association*



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Leading Contractors enthusiastically endorse the superiority of the new Ediswan shallow lighting trunking. In addition to the facilities commonly offered by trunking systems it has several unique features including an unobtrusive appearance which allows its use in decorated interiors. And the cost is low.

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Covered by Patent Applications Nos. 20625/54 30248/54

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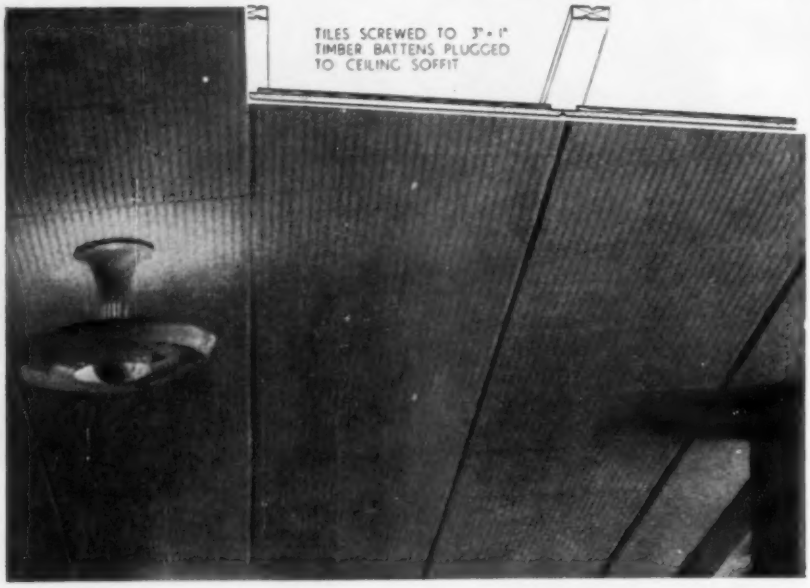

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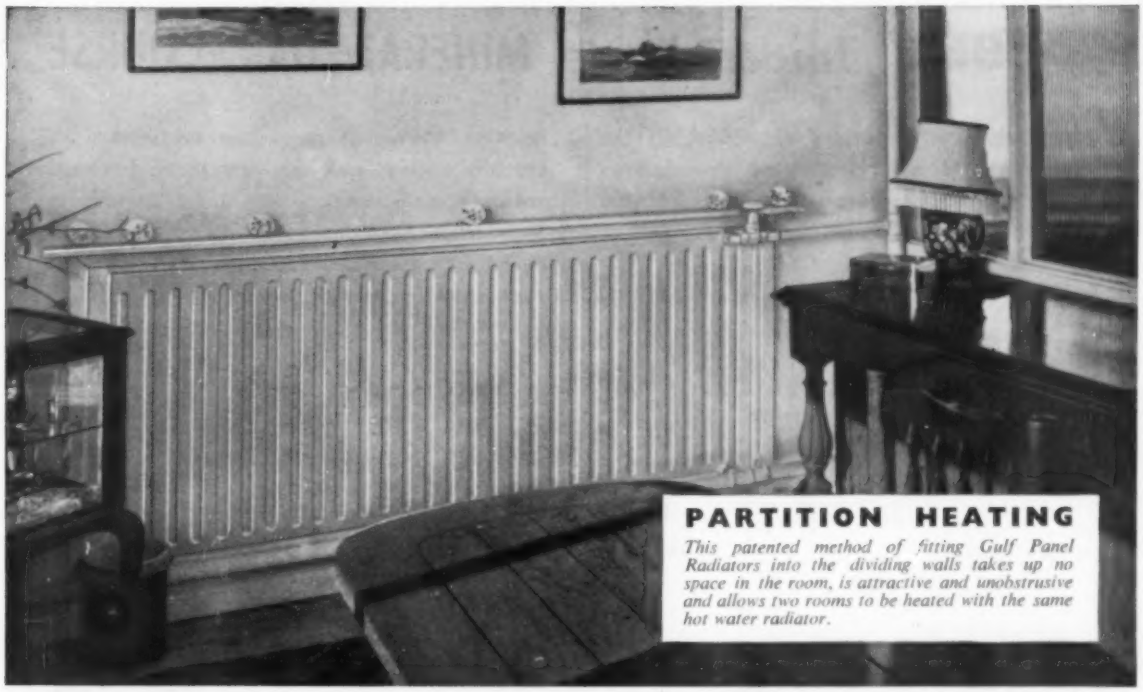

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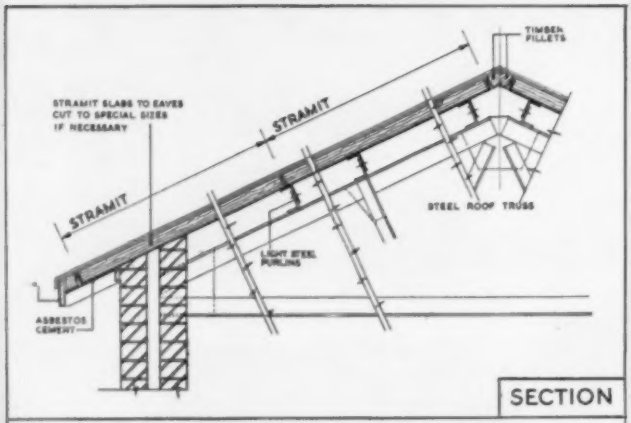

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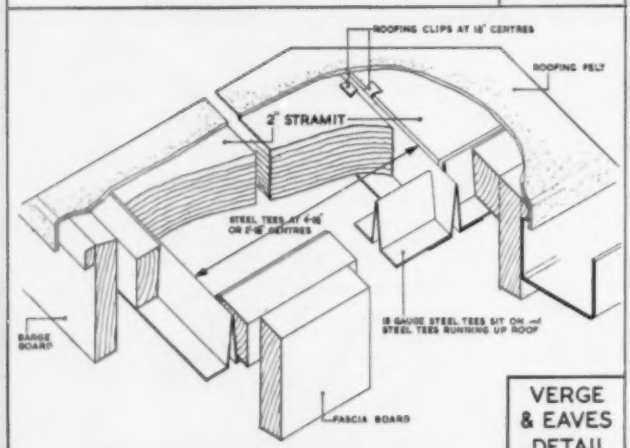

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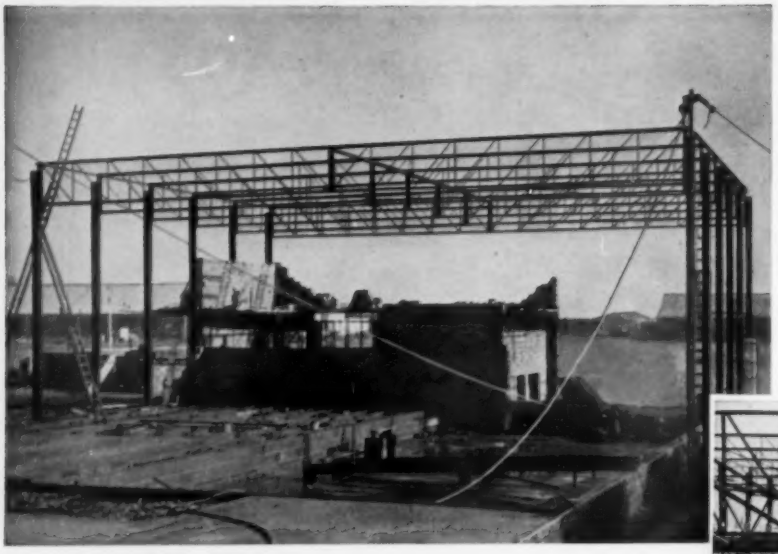

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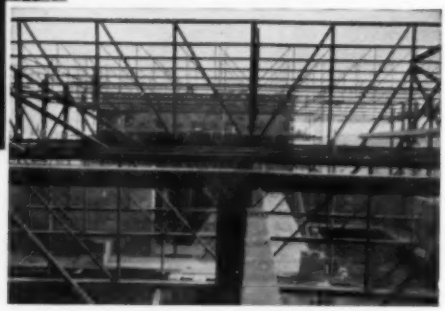

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Vol. 208 No. 6

THE ARCHITECT & BUILDING NEWS

11 August 1955

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THE SCREECH OF BRAKES

THE Building Industry after a brief run in top has been brought back into third gear by Mr. Butler's credit squeeze.

In Manchester, for instance, it is reported that the school building programme has been cut by £1m. and in addition proposed school extensions estimated to cost £100,000 have been relegated to a "reserved list."

In the debate in the House on the new economic policy, the Chancellor of the Exchequer explained that in order to ensure that the Nation was not trying to do too much at once he proposed to apply a policy of slowing down rather than by making cuts in capital investment. This sounds less harsh, but in effect is it not the same thing?

Since we heard from Mr. Macmillan that "There ain't gonna be no war," it could be expected that the engineering industry might have to be prepared for a reduced output on armaments, however cautiously or gradually applied, but the Building Industry on the other hand might reasonably have expected the lessened tension resulting from Geneva to favour it economically to some extent, however small.

Psychologically the time is over ripe for a concerted effort to extricate ourselves from obsolescence and overcrowded conditions of work and home-life. A check now is discouraging.

Obviously, Mr. Butler does not enjoy putting on the financial brake, so he blows the horn in an apologetic way by exhorting the local authorities to show restraint as well. In his replies to Mr. Gaitskell who asked what cuts if any would be made in the programmes for schools, hospitals and slum clearance, Mr. Butler said that authorizations given to local authorities had not been withdrawn, or specific programmes which had already been announced, cut down. His appeal to local authorities for restraint covered these and all other capital developments, but the Government did not intend to create uncertainty or run the risk of delaying essential work, as they might do if they embarked on rearrangements of these programmes.

As regards housing Mr. Butler said that authorizations would go on in this field also. "The intention is that housing should make a general contribution to the target I have in mind, of not trying to do too much at once." The increase in loan charges brings this point home.

GREEN BELT CIRCULAR

LAST April Mr. Duncan Sandys nailed "green belts" to his mast in unequivocal words "I am convinced that for the well-being of our people and the preservation of the countryside, we have a clear duty to do all we can to prevent unrestricted sprawl of the great cities."

The circular his ministry has now sent out to local authorities urges them to adopt "green belts" and to submit sketch plans as soon as possible.

Simultaneously comes the sound of grumbling from the private house-builders that there is an increasing shortage of land for them to build on and that local authorities are frustrating their efforts to find it.

So long as people want to buy houses from private builders, especially those registered with the National House Builders Registration Council, they should have every assistance to site their houses according to post-war ideas and not as in the haphazard pre-war *laissez-faire* sprawl, underneath which lie thousands of acres of "green belt" of other days.

Builders must learn to take their eyes off fields and orchards and look at development plans instead. When they do they should have every assistance from the local authorities.

EVENTS AND COMMENTS

NEWCASTLE CONTEMPORARY

British Railways have redecorated and refurnished two waiting rooms at Newcastle Station. Contemporary furniture and colour schemes have been used and the result is said by the *Manchester Guardian* to be a success. It remains to be seen whether the public will respect these decorations and whether they will stand up to such things as soldiers' boots, sea kitbags, babies in arms and Newcastle grime. The finishes of both walls and furniture have been chosen with some care and are of the "wipe with a damp rag" variety. There is hope that the experiment will be successful because the modernization and redecoration of the general waiting room at York in 1953 led to a considerable improvement in the habits of its users and only one cigarette burn has been reported on a non-burn resisting surface.

It is now apparently considered quite acceptable for smokers to stamp their cigarette ends into the floor covering no matter what it is. Do they, I wonder, do it in their own homes? People giving trade, and other, parties do encourage this loathsome practice by omitting to provide enough ash-trays.

I have no doubt that flooring manufacturers are working hard to produce materials which will cheerfully resist even the unstamped-out cigarette end, but, although they will be helping the floor owner they will also be encouraging this class—this very large class—of smoker.

A FILM ON MODULAR CONSTRUCTION

Last week Mr. Rodney Thomas gave two showings of a film on modular construction which he and his associates have made. His audience were members of the Modular Society. Mr. Thomas' house, office and studio are set in an enchanting little garden behind a yellow door off the Fulham Road. The surroundings and décor and arrangement of the offices at once give the impression that life there is good, serious and busy. I tore myself with difficulty from an investigation of the pump-driven stream in the garden and went to see the film. I am interested in modular co-ordination but I can very seldom follow the experts in their reasoning. The film brought daylight to me on a number of very interesting points. By means of coloured diagrams, cunningly animated with commentary by Mr. Thomas himself, the film showed a system of construction design which appeared to me to solve most of the difficulties of the modular business. It appeared to be adequately flexible in its dimensioning and to provide satisfactory solutions to the familiar problems of internal and external corners, walls of different thicknesses and openings in walls and partitions. Small houses, a vast hotel and some industrial buildings based on the theories explained were illustrated in the film in model form. To soften the impact of a subject which is usually somewhat arid the film started and ended with shots of the charming garden to which we returned at the end of the performance.

HEAT PUMPS

There are now two types of domestic heat-pump on the market. Both are quite small machines and perform generally similar functions. They supply domestic hot water and ice and they cool a normal-sized larder. Examples of both types will soon be working at the Building Centre. I understand that the prospect of the development of larger installations for domestic and commercial use is not, for technical reasons, at present very bright.

THE GAUMONT, SHEPHERDS BUSH

Some time ago I commented on the fact that the Shepherds Bush Pavilion, one of London's first large cinemas and empty since the war, was being done up. This building, designed by the late Frank Verity, was awarded the London Architecture Bronze Medal in 1923. Mr. S. Beverley, partner of the late Frank Verity, has carried out considerable alterations to the interior, but externally the building is almost unaltered, except for the addition of a large marquise over the main entrance. The cinema was reopened as the Gaumont on July 25.

THE GRANVILLE, FULHAM BROADWAY

Associated Rediffusion, Ltd., one of the commercial TV companies, has taken over the Granville Theatre, Fulham Broadway, as a studio. I hear that it will be used mainly for the production of plays. The stalls have been removed and a large control room built under the dress circle. The stage has also been extended into the house for ease in moving cameras and other equipment. The general character of the auditorium, which rather surprisingly is finished in elaborately modelled ceramic tiles, even to the fronts of the balconies, has been preserved. I do not know the history of this pleasant little theatre but apparently it had aspirations for the elaborate skylight is decorated with the names of classical composers.

FAMILY DOUBLE

Messrs. Taylor Woodrow announce that they are to build the second Calder Hall atomic power station. This firm is already at work on Calder Hall "A" power station which will be producing electricity next year.

Taylor Woodrow have recently appeared as patrons of the arts in an unexpectedly dramatic way. Not long ago they telephoned Mr. F. H. K. Henrion and commissioned him to design a mural for part of a wall in the main concourse at London Airport to commemorate the fact that they were the contractors. On the same day another department, unknown to the first, telephoned Miss Daphne Hardy, without knowing that she was Mrs. Henrion, and commissioned her to model a statue to represent British Atomic Man as part of their exhibit at the Atomic Energy Exhibition being held at Geneva from August 8 to 20. Miss Hardy finished the 25ft-high statue in ten days and it was transported to Geneva on a special lorry.

C.I.A.M. SUMMER SCHOOL

Trevor Dannatt, secretary of the M.A.R.S. group, tells me that since the C.I.A.M. congress is being held in Algiers in September there will be no C.I.A.M. Summer School in Venice this year. September is considered the ideal month for the school as at that time many cultural and artistic events are held in the city. There will, however, be a Venice Summer School in 1956 and anyone interested should write, but not until after Christmas, to

Mr. G. H. A. Hughes, Director of the L.M.B.A., with a contract dated 1472 which has come to light after being in his family for over 200 years. It is for the building of a house in Bristol for £6 3s 4d to be completed in four months

Segreteria Scuola Esira C.I.A.M., c/o Instituto Universitario di Architettura, Fondamenta Nani 1012, Dorso Duro Venezia, Italy.

The course will once again be concerned with a specific planning and architectural problem in Venice.

FROGS

The London Brick Company, in a letter to the N.F.B.T.E., announces a return to the V-shaped frog. You will remember that last summer the L.B.C. caused a storm of brick dust by introducing a larger and U-shaped frog with the suggestion that such bricks should be laid frog downwards. They alleged all-round economies.

Amid general consternation meetings were called between the L.B.C., the D.S.I.R. and the N.F.B.T.E., and the new frog would seem to be one of the results of their deliberations. The new frog is less in volume than the U-frog but more than the old V-frog. The L.B.C. sticks to its guns about laying bricks frog downwards in most brickwork except where loads are exceptionally heavy. The L.B.C. points out that the B.R.S. agrees on this point.

HOT AER

The P.R.A. started his term of office by being himself, an engaging funny man with a lovely collection of precious things and one thought a modicum, at least, of good taste. He was excellent company and, provided that he was not taken too seriously, he had his place among the critics of modern architecture. He was, on his election, in a very strong position, he could have done a lot of good by showing an appreciation of the best of our modern work and by keeping the architects' end up generally. If he had found himself constitutionally unable to support modern architecture and had been a great man, he would, without doubt, have kept quiet, taken advice and then confined himself to uncontroversial statements designed to help his profession to produce better architecture. Instead of this he chose from the day of his election to denigrate architects in general and all their work and having, to the enormous delight of the popular Press, demolished contemporary architecture, he has put absolutely nothing whatever in its place. Professor Richardson's distinguished predecessors have frequently played merry hell with painting, but, broadly speaking, this has little effect on the general public. The rubbish which the P.R.A. talks could, if taken seriously, do a great deal of harm.

Although the national Press has not as yet raised so much as an eyebrow at the professor, the City Press snubbed him sharply after his deplorable performance before the L.M.B.A. by pointing out that each of the many different types of office building required in London must be designed to serve its own particular purpose and could not be put behind the professor's mock façades.

The trouble about the P.R.A. is that he is not only playing to the gallery, but to the bottomless pit as well.

THE CORONATION ARCHES

The 65ft high arches which looked so well in the Mall at the time of the Coronation are going to be used as the framework of a store to hold straw for the manufacture of Stramit board. The store will have an area of 12,000 sq ft.

You may remember that I was among the first to protest at the M.o.W. suggestion that the arches should be used as the main structure of a palm house at Kew Gardens. At that time Decimus Burton's palm house had been condemned as unsafe and closed. It was thought that it would have to be pulled down. Closer inspection proved it to be repairable and reconstruction work is now well advanced.

What fun the Dr. Pevsner of 2055 will have when he discovers the origin of the Stramit store!

CAR PARKS UNDER LONDON

The London and Home Counties Traffic Advisory Committee is disappointed that the Minister of Transport has been sitting on the consultant's report on the construction of car parks under Grosvenor, Cavendish and Finsbury Squares since October, 1954, and hopes that the Minister "will soon be able to announce that the projects are being put in hand."

I hope precisely the opposite.

The Committee has, however, had one good idea and that is to build car parks over railway cuttings in London, particularly in the Farringdon Street-Moorgate district.

I looked through a whole batch of American articles on "down town" parking recently and came to the conclusion that there is no solution. All the writers seemed to agree that the only way out was to ban private cars from central areas and make people use public transport more. That is all very well in the States, but I cannot see the Underground taking many more people unless radically redesigned. Surface transport might, I suppose, be increased.

WISDOM IN WALSALL

The Walsall Education Committee has, by a large majority, agreed to recommend that a London firm of architects, experienced in school design, should be appointed to design a secondary school. This reversed the recommendation of the Finance and General Purposes Committee that the school should be designed by the Borough Surveyor.

ABNER

NEWS

Applications for R.I.B.A. Fellowship

As announced in the R.I.B.A. Journal for May, 1955, a new procedure for considering applications for election to the Fellowship will come into force on January 1, 1956. From that date, all candidates, without exception, will be required to submit to the Fellowship Examiners drawings and photographs or examples of work. They may also be required to attend for an interview, which may, however, be dispensed with at the discretion of the Fellowship Examiners.

Hitherto, Associates who have been principals in private practice for not less than seven successive years, and certain other Associates regarded as being in a position of equivalent responsibility, have been able to proceed to the Fellowship without the submission of drawings or examples of work. This concession terminates on December 31, 1955.

After that date, the Fellowship Examiners will meet monthly to consider applications for the Fellowship. Any Associates applying will be required to submit to the Examiners for the approval of the Council working drawings and photographs of one or more of their executed buildings, which may be supplemented by original sketches or measured drawings of actual work. Applicants are requested to indicate on their drawings the date upon which they were prepared.

The provisions at present in force for Licentiates applying for election to the Fellowship are not affected.

Green Belts

In a Circular (42/55) to local authorities, the Minister of Housing and Local Government recommends Planning Authorities to consider establishing a Green Belt wherever this is desirable in order:

(*a*) To check the further growth of a large built-up area.

(*b*) To prevent neighbouring towns from merging into one another; or

(*c*) To preserve the special character of a town.

Wherever practicable, a Green Belt should be several miles wide, so as to ensure an appreciable rural zone all round the built-up area concerned.

Inside a Green Belt, approval should not be given, except in very special circumstances, for the construction of new buildings or for the change of use of existing buildings for purposes other than agriculture, sport, cemeteries, institutions standing in extensive grounds, or other uses appropriate to a rural area.

Apart from a strictly limited amount of "infilling" or "rounding off" (within boundaries to be defined in town maps) existing towns and villages inside a Green Belt should not be allowed to expand further. Even within the urban areas thus defined, every effort should be made to prevent any further building for industrial or commercial purposes; since this, if allowed, would lead to a demand for more labour, which in turn would create a need for the development of additional land for housing.

A Planning Authority which wishes to establish a Green Belt in its area should, after consulting any neighbouring Planning Authority affected, submit to the Minister, as soon as possible, a sketch plan, indicating the approximate boundaries of the proposed Belt. Before officially submitting their plans, authorities may find it helpful to discuss them informally with the Ministry either through its regional representative or in Whitehall.

In due course, a detailed survey will be needed to define precisely the inner and outer boundaries of the Green Belt, as well as the boundaries of towns and villages within it. Thereafter, these particulars will have to be incorporated as amendments in the Development Plan.

This procedure may take some time to complete. Meanwhile, it is desirable to prevent any further deterioration in the position. The Minister, therefore, asks that, where a Planning Authority has submitted a sketch plan for a Green Belt, it should forthwith apply provisionally, in the area proposed, the arrangements outlined above.

T. & C.P.A. Green Belts Committee

The Town & Country Planning Association has set up a special "Green Belts" Committee in response to a request by Mr. Duncan Sandys for the co-operation of the Association in tackling the problem of green belts for towns at their 56th Annual General Meeting in May, 1955.

Mr. Sandys asked the Association, as experienced people in this field, to go into the problem and advise him on it. Which places should be protected? What should be the depth of green belts for various towns? What should be the degree of building restriction?

The Association in due course will take recommendations to the Minister.

The following members of the Association constitute the Green Belt Committee:—

Chairman: F. J. Osborn (Chairman, Executive T.C.P.A.); *Hon. Secretary:* Arthur E. Telling (Barrister at Law); Sir Harold Bellman, consulting member (Chairman, Abbey National Building Society); B. J. Collins (Middlesex County Planning Officer); Sir Walter Gurney, representing the Council for the Preservation of Rural England; J. G. Jefferson (West Sussex County Planning Officer); J. W. Laing (Chairman, John Laing & Co., Ltd.); P. W. Macfarlane (Planning Consultant); R. Nicholas (City Engineer and Surveyor, Manchester); Sir George Pepler (Planning Consultant and Past President Town Planning Institute); Peter Stock; T. F. Thomson (County Planning Officer, Hampshire); R. H. Whitehorn, representing the Council for the Preservation of Rural England.

London Society of Private Architects

Another meeting of the London Society of Private Architects was held on July 21, at the National Liberal Club. Following a progress report by the chairman, the aims and objects and the constitution of the Society were formally adopted. Mr. S. H. Statham, the chairman, told the meeting of the great interest that had been aroused among private practising architects and also of the number of persons who were anxious to join the Society and help in its activities. Letters had been received from all parts of the country and from the Commonwealth. Mr. Statham referred in particular to a letter he had received from a group of architects in New Zealand who stated that architects are experiencing the same general trend unfavourable to architects in private practice and how many of the New Zealand architects are most concerned to resist the submergence of private practising architects

The chairman, in giving the outline of the Society's proposed future activities, stated that it was encouraging to see the interest which had been taken in the Society by a large number of the builders of the country, particularly a number of the older and well-established firms, who felt that the gradual disappearance of the private practising architect was just as much a threat to the building industry as to the architectural profession itself. If the time arrived when most building firms had to rely on contracts put out by Local Authorities, Ministries, etc., the position of the industry would become intolerable.

The detailed steps to be taken to implement the Society's policy will now be considered by the committee and laid before the next general meeting of the Society.

Architects in private practice who may wish to join the Society should contact Mr. David Steven at 21, Brunswick Square, W.C.1. Terminus 0202.

APPOINTMENTS

The appointment of Mr. E. Berry Webber, F.R.I.B.A., has been proposed to West Bromwich Town Council for the design of the new municipal buildings at Highfield. Mr. Berry Webber is architect for the new Civic Centre, Solihull.

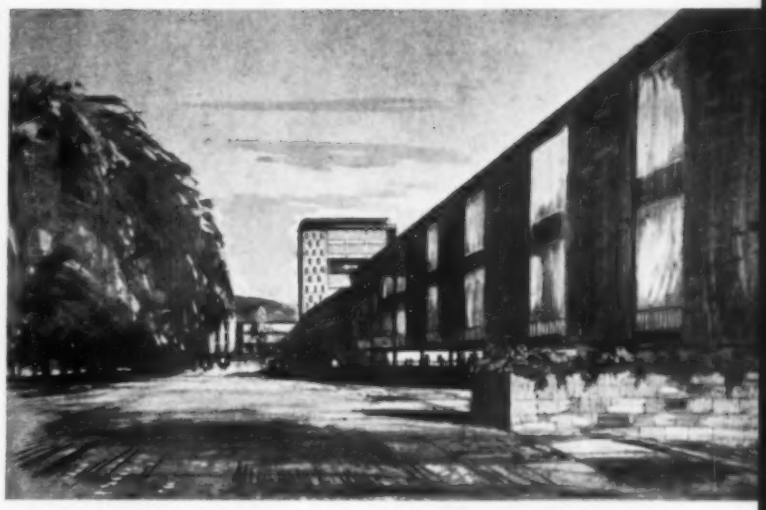
Sir Thomas Sheepshanks, K.C.B., K.B.E., Permanent Secretary of the Ministry of Housing and Local Government, is retiring from the public service on October 1. He will be succeeded by Dame Evelyn Sharp, D.B.E., at present Deputy Secretary of the Ministry.

Mr. B. H. Thompson, A.R.I.B.A., Deputy Borough Architect, Bournemouth, has been appointed Deputy Architect, Devon County Council.

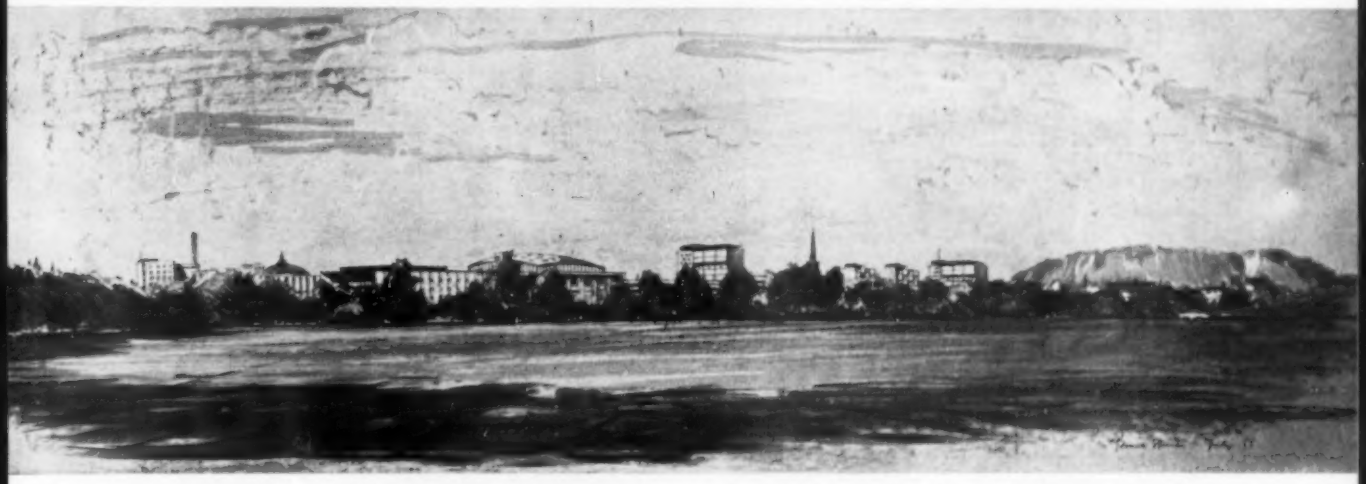
Some of Mr. Basil Spence's proposals for Edinburgh University extensions in George Square

A RECENT article in the *Scotsman* gave an outline of proposals for the development of Edinburgh University over the next fifty years, which have been approved in principle by the Corporation Planning Committee. The scheme preserves the 18th Century West Side of George Square and colonnaded extensions to the Medical School on the North Side have been designed in harmony. The purpose of the colonnade is to enable students to filter through from the Meadows into George Square, which may be turned into a quadrangle. Mr. Basil Spence is quoted as saying, "If we can amend the Medical School so that students can continue on foot through successive courtyards right up to the McEwan Hall, then we have a chance of getting a co-ordinated scheme with a heart."

George Square and the Meadows are to be the University's "Garden Front," and the central feature would be the University Library on the South Side of the Square. On the East Side the Women's Union would probably be extended and also on the S. & E. sides departments for geography, commerce, social study and economics, etc.



Sketch showing proposed new South Side of George Square



An idea of the probable skyline of the proposed University extensions

George Square with existing West Side on left preserved and in background proposed colonnaded extensions to Medical School

Two Displays For Michael Nairn & Co. Ltd..

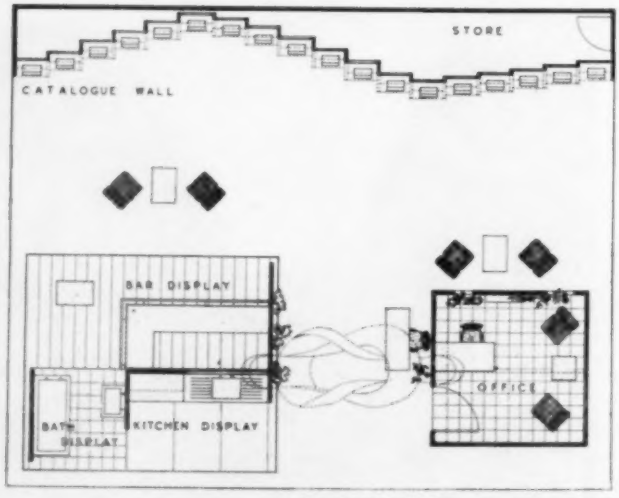
designed by:
NEVILLE CONDER

THE clients are manufacturers of linoleum and other kinds of floor coverings in sheet and tile form and it was a feature of both displays that all their products and every colouring in each range was shown.

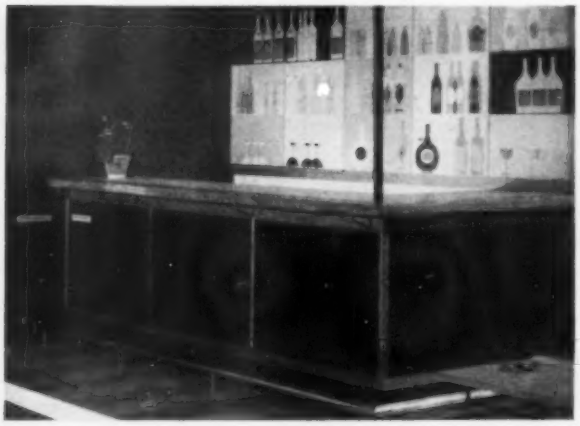
The main feature of the exhibition stand was the catalogue wall which formed a background 20ft. high divided into three vertically and 18 horizontally. Each vertical set of three samples was given to a single product and showed typical patterns while a rack at the bottom contained the complete range for visitors to handle. The curve of the wall and the outward stepping vertical section allowed each of the 54 panels to be on a different plane from its neighbours. At a right angle to this wall were set two perfectly life-like human figures (beautifully made by Phyllis Richards). These arrested the attention of the passer-by, and made one sense the wall as a floor. The wall was further animated by a set of spotlights housed in the roof of the other part of the stand that were automatically switched in series to give a changing emphasis.

The other two major elements of the stand were kept towards the main gangway, thus creating a deliberately vacant internal space. These two elements, the office and a display of products in use in settings, were linked together at high level with a sculptural "knot" made of linoleum cemented to a continuous aluminium sheet.

1



Exhibition stand plan



2

A bar faced and topped with linoleum, with cupboard doors inlaid with a design in linoleum by Sheila Stratton

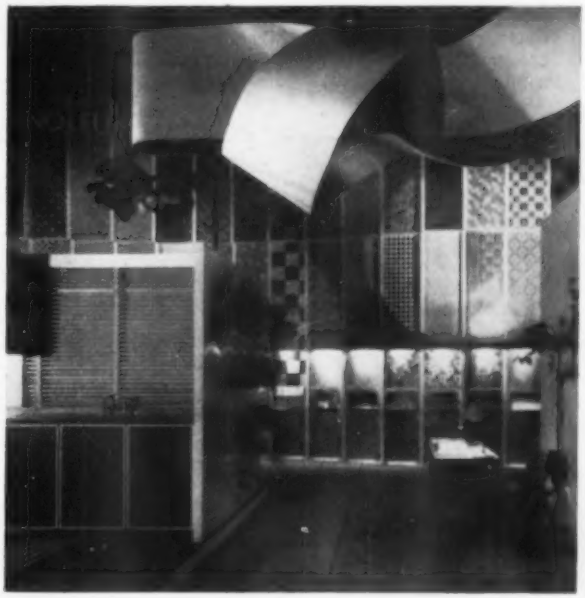
1

The catalogue wall and the sales area within the stand. The linoleum sculpture seen against the catalogue wall with the figures by Phyllis Richards giving the sense that one is looking down at a floor

The colour was provided solely by the products, all paintwork being white and the chairs being upholstered in white nylon fur.

The showroom is a conversion of existing space within the clients' London office building at Aldersgate. New windows and a false ceiling have been fitted and the sprinkler system rearranged. A large free floor space was required so that trade receptions can be held within the showroom.

3



4

3

A general view from the main gangway. The kitchen display is on the left: small office on the right. In the background, the catalogue wall

4

A view of the back of the office. A pattern of holes in the wall was introduced as an anti-claustrophobia device and extended above to form housings for the spotlights that played on the catalogue walls. Ferns and fur upholstery provide a textural contrast to the products

Two Displays

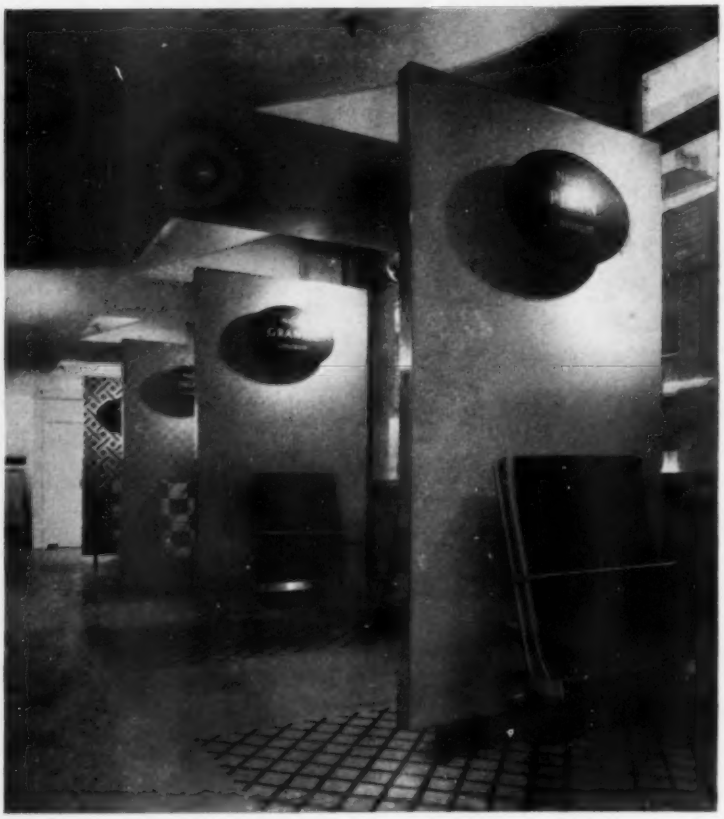
for Michael Nairn Ltd.

SHOWROOM

1
The main display of linoleum. Each panel features a typical sample of one type of linoleum, the rest of the range being in racks. They are placed centrally to the windows and the new low ceiling rises over them

2
A general view of the reception area. The tile cabinet on the left is here shown closed

3
One of the two tile tables designed so that visitors can arrange patterns themselves at a convenient height. The surface is grooved at joint lines and has finger slots to facilitate lifting. The cabinet supported at eye level contains the complete range



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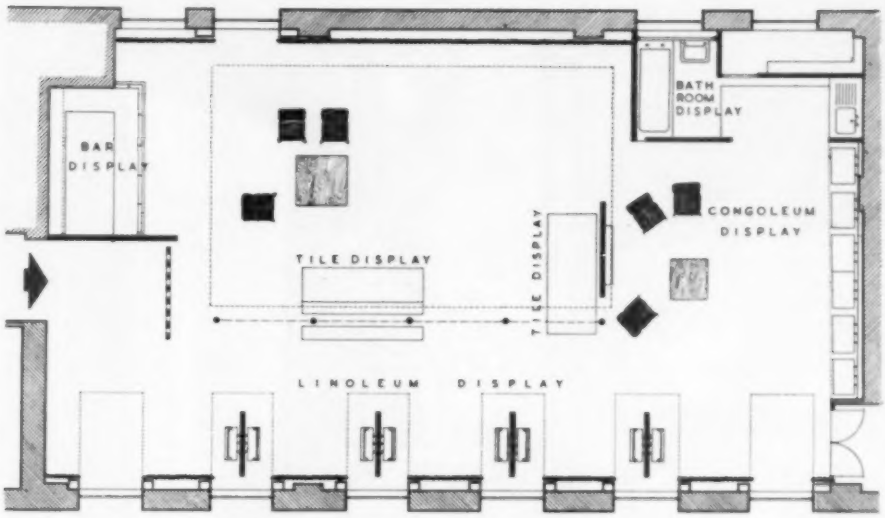


Plan of Showroom

3

4

The section at the end of the showroom is for the products of the associated company, British Congoleum Ltd., and displays of Congoleum and Congowall—a new waterproof wall covering

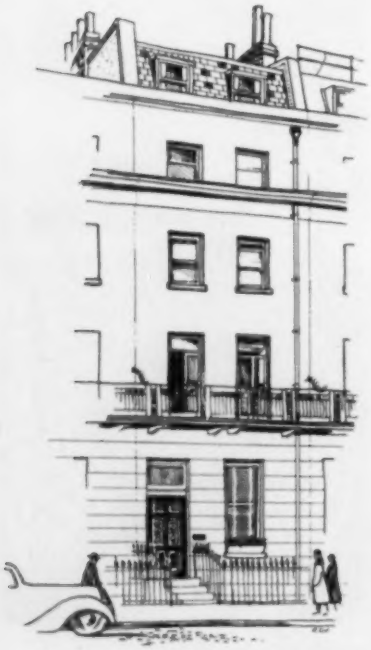
4

The Principal's room

CONVERSION OF No. 3 HOBART PLACE, S.W.1

architect: RAGLAN SQUIRE, F.R.I.B.A., M.S.I.A.

assistant designer: Owen Daish



No. 3 Hobart Place, S.W.1

THIS early nineteenth century house, situated on the fringe of Belgravia and now zoned for "Business Use," has been converted to serve as a headquarters office for Raglan Squire and Partners. This firm has other offices in London and also in Rangoon, Dacca and Baghdad. In its overseas operations, the firm acts as architects, engineers and surveyors for all its work, hence accommodation for these activities has to be provided here. At home the firm usually acts solely as architects in the normal way but here, also, they have combined all three professional services on certain projects for American clients.

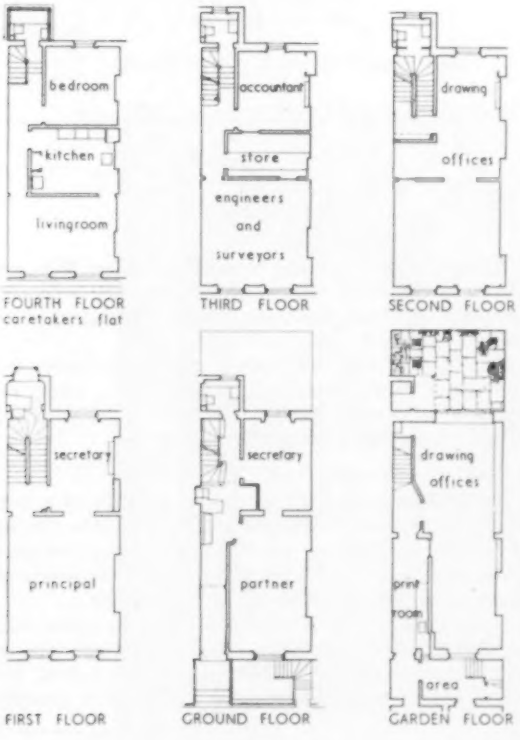
Reception and Circulation

Apart from space limitations, it was considered desirable to provide a reception point as near as possible to the front entrance, in order to save callers the usual search for attention. The lower treads of the main stairs were therefore re-formed as winders, and the narrow hallway widened to make room for the telephone switchboard and a built-in reception desk, together with a settee for visitors who may have to wait. This also seemed an appropriate position to leave a small recess for the display of models, photographs, etc., of the firm's work.

The original hallway was both long and excessively high; features to be overcome, if possible. A slatted ceiling just above the head of the lobby doors leads the eye on to the framed opening to the enlarged reception area. This frame and a similar one at the foot of the stairs both have transoms at existing door height with louvred panels over. These define the reception-waiting space, as well as giving support to the slightly higher fibre-board ceiling above. All combining to create a more intimate feeling, while helping acoustically.

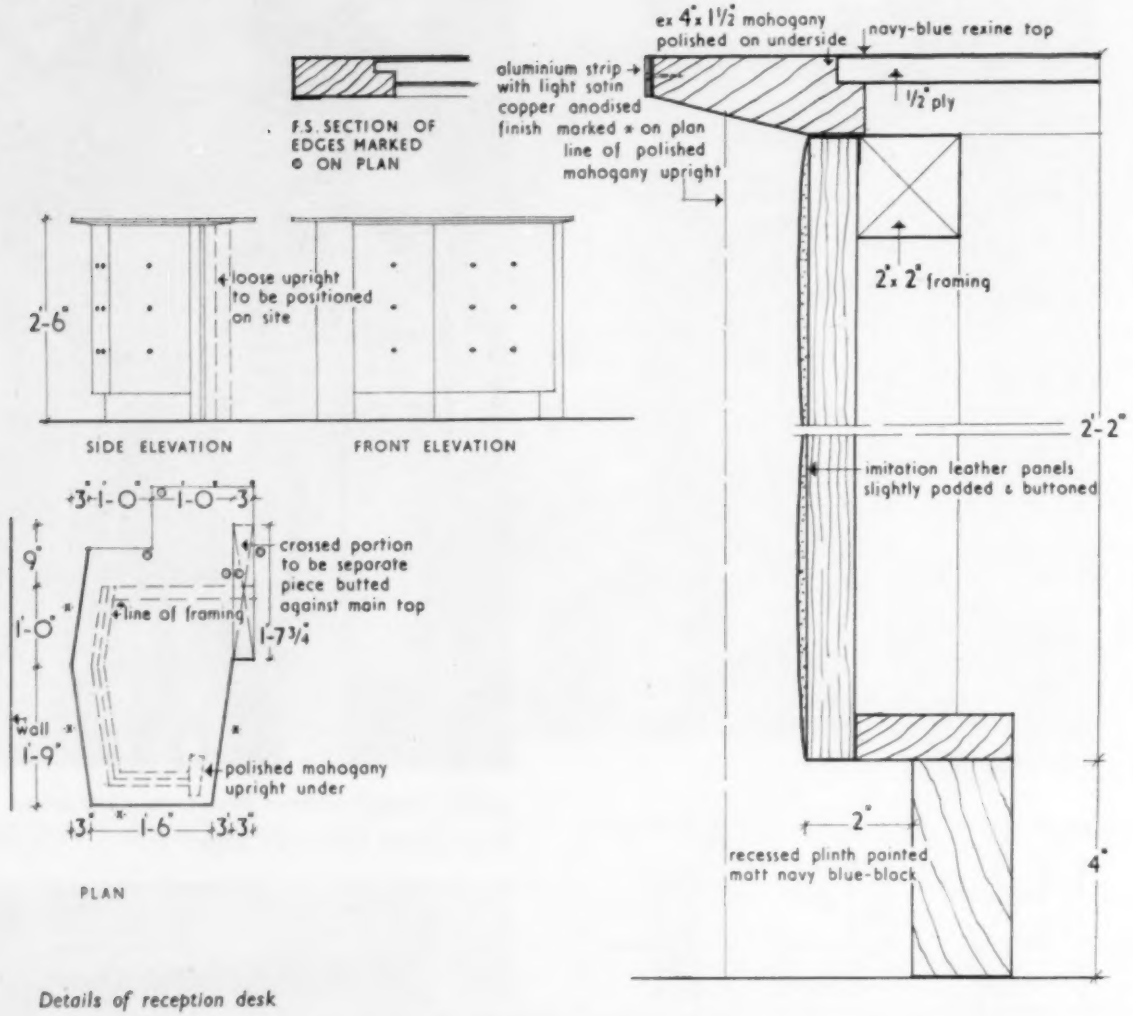
Before conversion

After



A Lynn Chadwick sculpture screens view above ceiling

Reception desk and visitors' settee



Details of reception desk

Conversion of No. 3 Hobart Place, S.W.1

A mirror has been used over the display space to give a further illusion of width.

To allow for the passage of light and air, these new ceilings have been kept open above. To screen the tops from view as one descends the stairs and acting as an infilling, is a metal and plaster sculpture by Lynn Chadwick.

Office Disposition

There is a Partners' office on the ground floor, with a secretary's office adjoining, and a drawing office on the lower ground floor, where all partitions have been cleared away, as were all back additions, thus allowing as much natural light as possible. There is also a small print room leading to the front area stores. The rear area is paved, endowed with a Chadwick sculpture and shade-gardening is being attempted.

The Principal's room is on the first floor and again there is a secretary's room adjacent. Both this and the ground floor Partners' room serve as conference rooms.

There is another drawing office on the second floor, and here a small technical library, with shelving and a drawing materials cupboard, has been formed by taking in an original corridor.

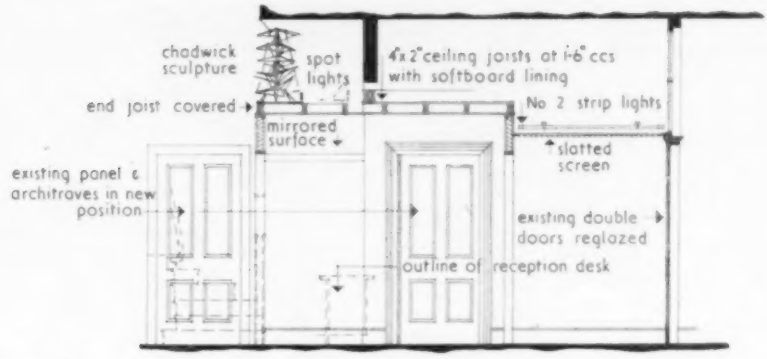
On the third floor one room is used by Engineers and Surveyors and the other by Accounts staff. These are separated by a small internal store—the ultimate resting place for drawings, files, samples and the like.

Other Accommodation

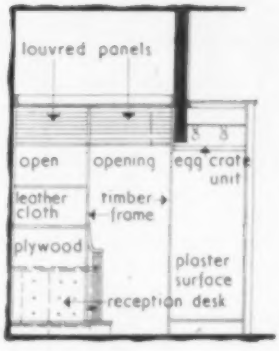
On the fourth floor is a small flat, occupied by a male telephone operator/receptionist and his wife, who also act as caretakers. There is a top-lit kitchen between the front living room and the bedroom at the back. The bathroom being in the rear projection, off the half-landing.

There are a number of small cloakrooms on similar half-landings below, the exception being that between ground and first floors. This has been turned into a small but useful place for interviews. The table top is partially

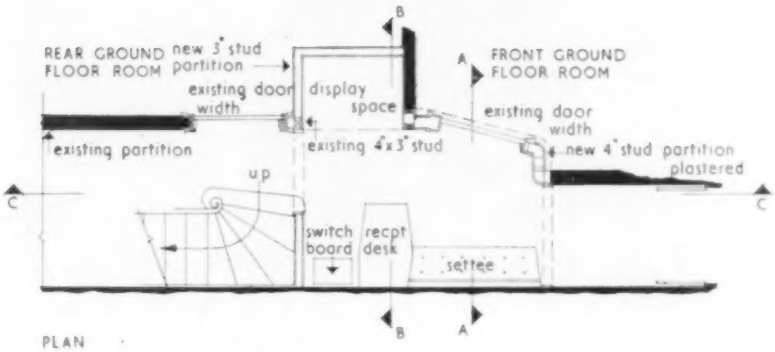
[Continued on page 170



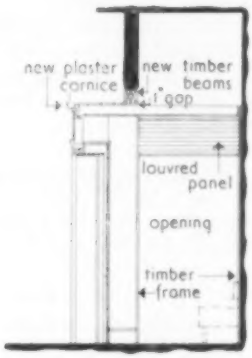
SECTION CC



SECTION BB



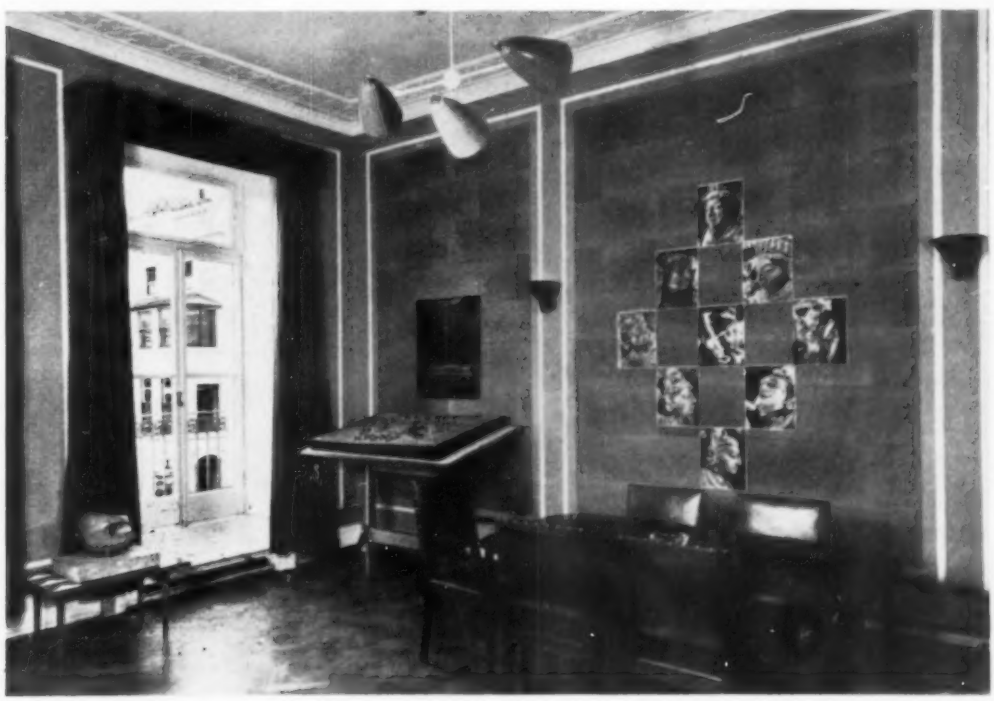
PLAN



SECTION AA

Details of ventilation to entrance

Another view of the Principal's room



Conversion of No. 3 Hobart Place, S.W.1

Continued from page 168]

screened by a small metal space frame providing shelves, cupboard and notice board.

Decoration Schemes

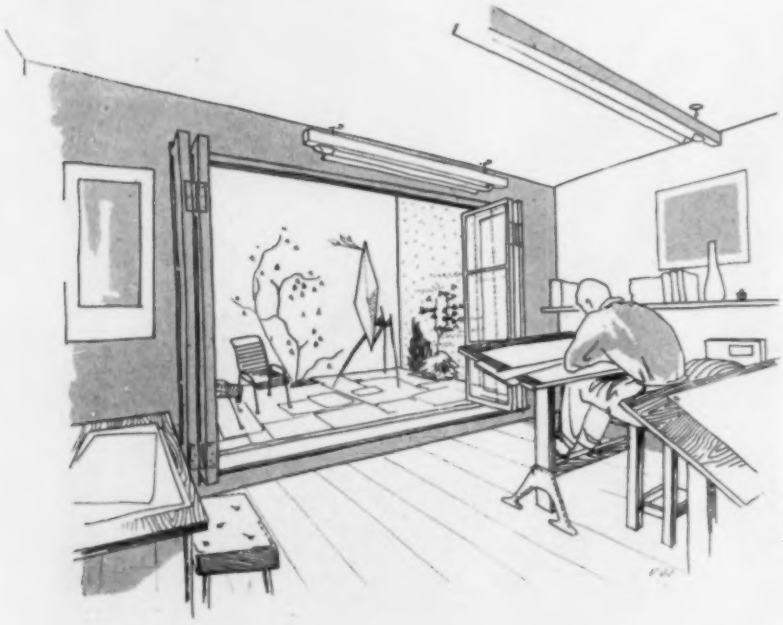
The walls to the main flights of stairs are papered in pale grey/blue glazed paper, with a Regency rosette pattern in white. The woodwork generally is also in white. The principal doors on each floor are in mahogany and match the handrail. The treads and risers are covered with grey lino, with white rubber nosings. The soffits to stairs and some ceiling panels are painted dark red, with white cornices. On the other parts of the stairs and in the entrance lobby the walls are painted, but the same colour scheme is continued.

By contrast, on one wall of the reception space, mahogany paper has been used to camouflage the G.P.O. switchboard, matching the mahogany frames, with their infilling panels of white painted louvres, dark blue leathercloth and natural plywood. The settee has a red tartan covering, and the reception desk a dark blue top, with natural leathercloth front panels.

The Principal's room has medium grey walls except for the chimney breast which is charcoal black. On the opposite wall the three panels have been covered with cork tiles left in the natural finish. There is a new horizontal recess over the fireplace surround, illuminated through a ground-glass sheet set level with the mantelshelf, these and wall panel mouldings, the ceiling, cornice, doors and all other wood trim are picked out in white. Primary colour is provided on chairs, light fittings, etc.

Other offices have mainly white woodwork and walls with one or two relieving areas of dark green, the ceilings being a pale yellow.

Ground-floor partners' room



Sketch of drawing office in the basement looking out on to a paved area endowed with Chadwick sculpture (seen above) and where shade-gardening is being attempted.

AL HADBA—THE HUNCHBACK

This picture of the leaning minaret of Mosul, Iraq, was taken by William Whitfield while on a town-planning investigation in Mosul and Nineveh for Raglan Squire and Partners. Because of the way it leans with an increased recklessness towards the top, Whitfield thinks it better value for money than Pisa, and he reports that the descent from the gallery was made doubly hazardous by his determination to get to the bottom before anybody discovered that the rule of the middle third was applicable even in Iraq. Height 60 metres, the tallest in Iraq. Material, brick. Built, 12th century

John H. Reynolds

A Backward View

By

H. B. CRESWELL

WHEN this writer was lately confronted with the photographs reproduced on this page, he was brought up short by baffled recognitions; and, when he had identified the building, he was brought up shorter still by realizing that his own hoofmarks might be lurking amid the prettinesses it deployed; for the building is the Royal Naval College at Dartmouth which, on July 2, celebrated the Jubilee of its opening, and he was pupil, or assistant, of the architect, Mr. Aston Webb—later Sir Aston, P.P.R.I.B.A., P.P.R.A.—when the job came into the office. Its arrival was auspicious. The powers-that-be apparently decided not to hold the Competition usual in those days, and handed the commission on a plate to the engaging little man who had already distinguished himself by winning competitions. Webb, in fact, webbed the job, as he was to webb much else in his long and active life.

How it came about that the building was opened only in 1905 is not clear, for the writer wandered forth in quest of the tide that leads to fortune in 1895. However that may be, the assistance he gave the architect by pouring water down his private speaking tube to the eager, listening ear of his chief draughtsman on the floor below, when he was out, and otherwise when he was in, has certainly not modified the design in such kind as to make this present assessment of it indecent.

In arriving at any assessment it is necessary to bear in mind that we are viewing an outstanding example of Modern Architecture; that is to say, it represents with distinction contemporary taste and fashion in Architecture at the cumulative crest of popular achievement. The work of Norman Shaw at Queen's Gate Street, St. James's and Chelsea; of Bodley at Cowley and Hoarcross; of Ernest Newton in many houses and the preciousnesses of Philip Webb and Nesfield, never impinged on "Modern Architecture." None of it was contemporary. It belonged, as it still belongs, to all time; but the design before us is, as has been said, an outstanding example of past "Modern Architecture," and we present moderns can only hoot at it oblivious of the fact that, on the same shallow impulse, the disciples of future modernity will be likely to have far better reasons for hooting at *us*. Webb's work, therefore, is at least entitled to friendly scrutiny.

We have to remember that Webb was handicapped in ways that would demoralize a modern architect. The poor little man had to *build*. There was no way out of it! It was impossible for him to construct. All he could do was to pile things up one on top of another; and a shock that would merely dent or bend one of our buildings would reduce any of his to a heap of dust and wreckage. He could not, for example, as we can, take his preliminary drawings round to a firm of engineers for them to arrange to carry a restaurant and swimming pool, say, on top of a theatre; nor could he survey streets and enrol the police so that the 90ft girders needed could be got on to the site. No. The poor wretch would have had to sit down and find a less simple solution of his problem. His resources, too, were otherwise cruelly limited. He had not much else to build with than brick, stone, timber, lead, iron, and so forth, and little pimping rolled steel joists that an engineer (at that time beginning to wait on his doorstep) would tip him how to make use of. No armoured or shuttered concrete, no cladding, no glass bricks were to be had; and however badly he might need substitutes for brick, stone, timber, lead or iron, he would not have succeeded in getting them.

It may be asserted with confidence that the widest enquiry and most diligent scrutiny of the restricted advertisements of those days would not have offered him the choice of more than a few hundred different kinds of paint. In fact, the unhappy man had not many more facilities for the creation of a great work of architecture than were at the disposal of poor Wren.

It is remarkable that, though so heavily handicapped, Webb was not only able to excel as an exponent of Modern Architecture, but to initiate the Modernity in which he

John H. Reynolds

The main entrance door

John H. Reynolds

The Royal Naval College, Dartmouth

excelled. Its beginnings are to be seen in those wonderful line sketches, in soft pencil on cartridge, of the outside staircase and other characteristic details of Bois, which won him the Pugin; and its remotest endings are seen where L'Art Nouveau fizzles out in Voysey's wallpapers. Webb was nearing 40 when, in a happy moment, he took a chance and weighed in on the corrosive nature of Birmingham's acid-laden air by facing the walls of his successful competitive design for that city's Law Courts, inside and out, with Terra Cotta. The moulding of the concrete-filled clay boxes, which replaced ashlar throughout the building, and which in chief was executed with the human thumb, lent itself admirably to the interlacing and dying out of shafts and mouldings that characterize Francois Premier, with the result that the fecundity of the architect's invention in the familiar field produced a building of outstanding merit both in excellence of plan and individuality of artistry.

The fame of this building, which is in no way a large one, was the making of the architect and the making also of Modern Architecture as represented by South Kensington Art Museum, Imperial Institute, Palace Theatre, Savoy Hotel and Treadwell and Martin pubs. It would be reasonable to suppose that, when Webb turned his back on Francis I and on Terra Cotta, both ruby and canary, it was because Treadwell and Martin had stunk him out; but the greater probability is that he was sickened by the overwhelming reek of Collcutt. Be that as it may, he turned to wider fields of Architectural frolic, and the Royal Naval College is an early doing in that kind.

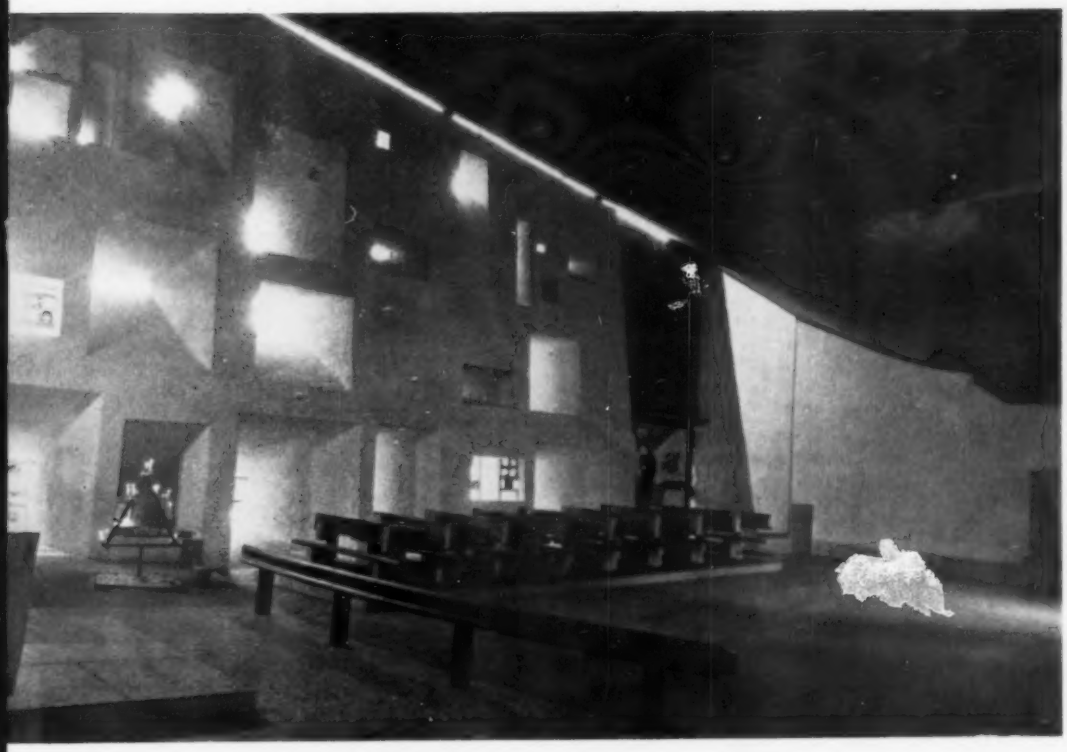
In the light of our present wider knowledge and more educated taste, criticism of the design must be, in the main, destructive; but there are excuses to be made for the architect. For example, the first objection likely to be made to the building as "Modern Architecture" is that, though a School, it has no appearance of being, say, a Nuclear Laundry or a Radar rope-walk, but looks like nothing on earth so much as a school. It is difficult to imagine what answer Webb would make to such an accusation; but when it is complained that he has failed to take advantage of a great opportunity to design a layout of flat roofings intersecting and overlapping in a variety of stepped levels, he could readily escape censure by explaining that air-travel was known to him only by balloon ascents, and that it never entered his head to design for bird's-eye viewing.

In one particular, however, Webb must stand condemned. His Naval College does not—repeat "not"—take the simplest form that the mechanical needs it serves might most conveniently impose on it. On the contrary, this architect, merely to satisfy a wayward craving that was probably evisceral in origin, has busied himself to design a building having an entirely superfluous orderliness of plan, and—in pursuit of some nebulous theory—what he probably called "balance and proportion," in elevation. Furthermore, instead of leaving the outside walls in the unadorned dignity of shuttered concrete with just one large, emphatic, original shape, object or device, placed eccentrically to serve as Eye-opener to the public, Webb has addressed himself to emphasizing proportions and stressing salients in his facade by the use of features that have little constructive need, and no other significance than that which relates merely to forms traditional in the evolution of classic architecture. What kind of excuse, it will be asked, could Sir Aston Webb offer for behaving in this way?

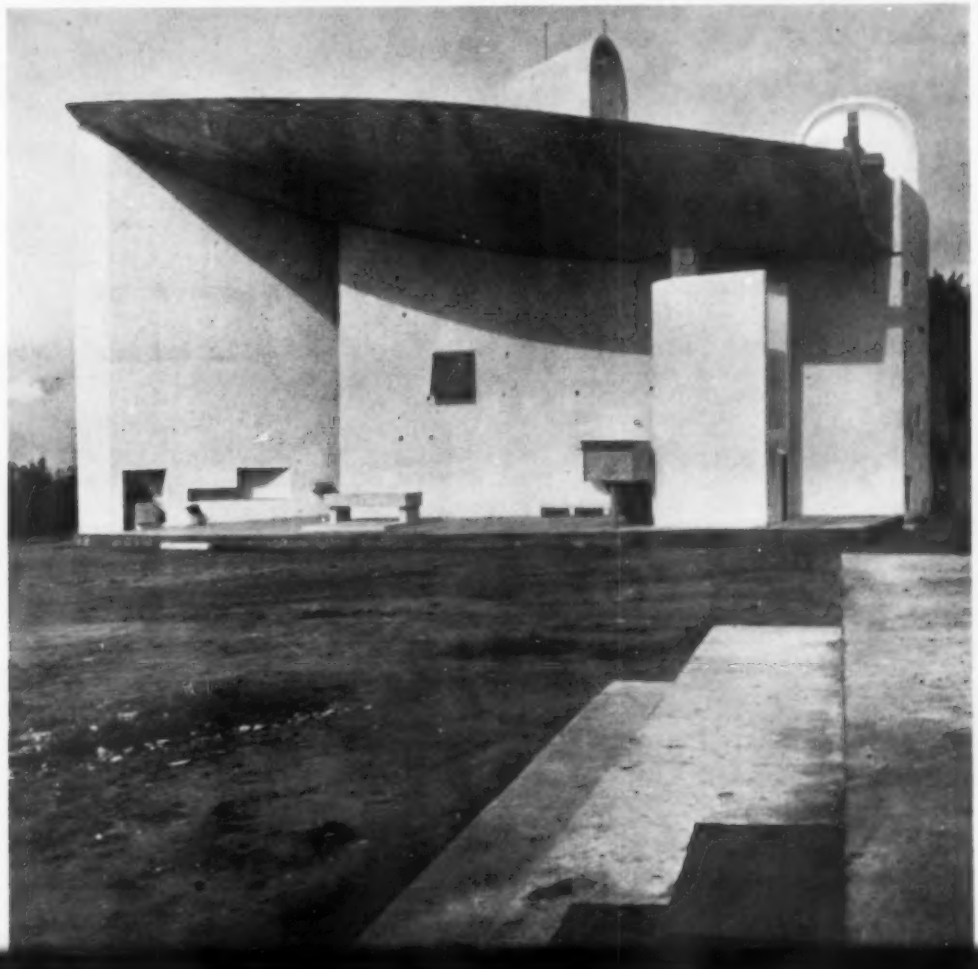
Notre Dame du Haut, Ronchamp

IT was Mr. John Summerson who said that M. le Corbusier was essentially, in spite of his parade of logic, mathematics and engineering, a poet, and although he describes the exterior of his reinforced concrete chapel as "an acoustic component in the domain of form," this remarkable building appears an individualistic piece of sculpture. It becomes associated with those other disturbing but vital buildings, the church at Assy and Matisse's chapel at Vence.

The village of Ronchamp had lost two earlier churches in the world wars, the site being a high one near the Belfort Gap. They approached Corbusier for their latest one. It is said that at first he refused, but changed his mind after a visit to the site. The problem was to design a place of worship not only for the village but also for the occasional pilgrimage numbering thousands. The new chapel has been dedicated and blessed by the Archbishop of Besançon, but it is reported that final consecration is being reserved until it can be certain that the chapel inspires the proper mood for prayer. *(Photos. : Lucien Hervé.)*



27 openings glazed with stained glass designed by le Corbusier light the interior



Elevation to reservoir

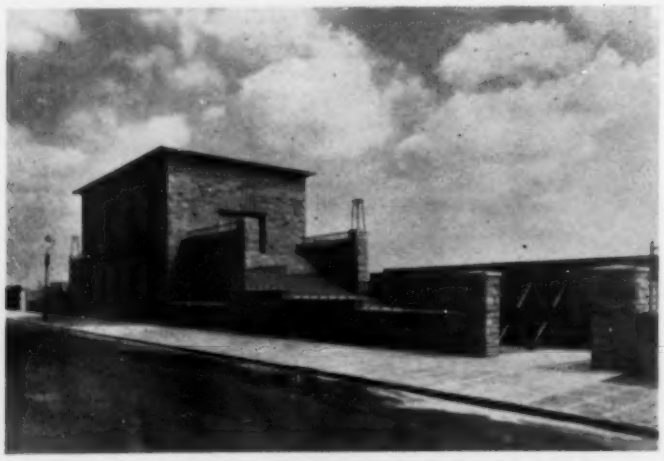
Heaton Park Inlet Well House

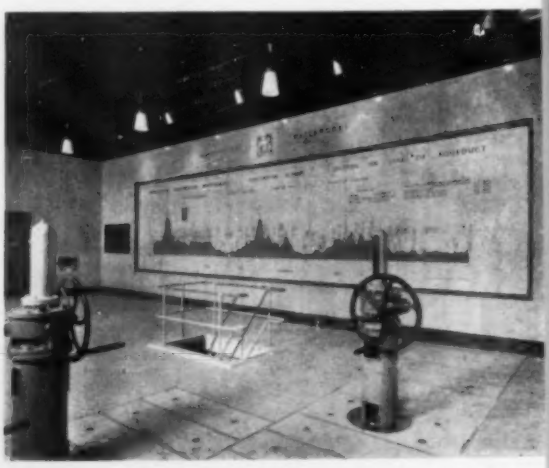
MANCHESTER CORPORATION WATERWORKS

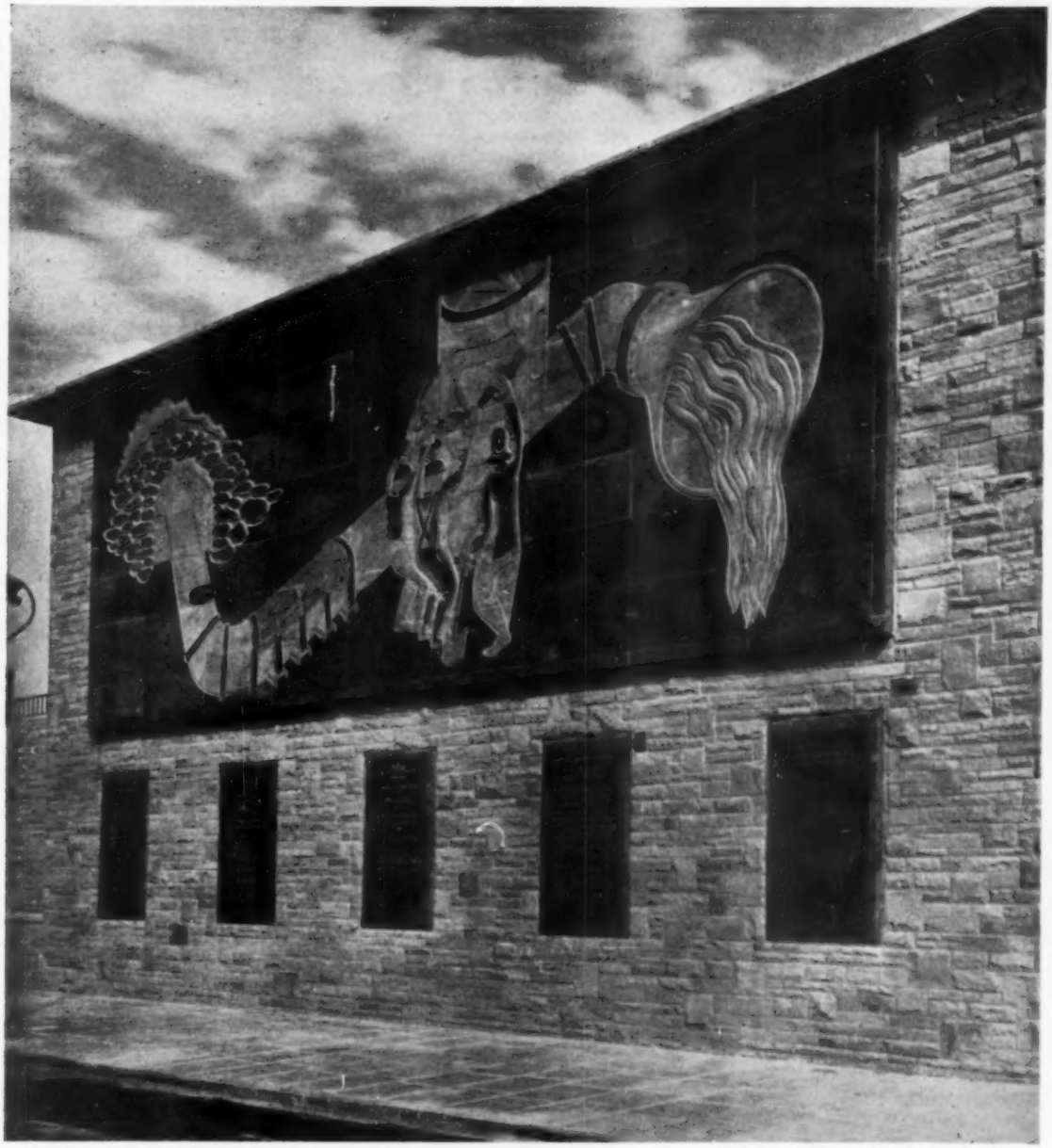
Below, left : Elevation to Heywood Road
Right : Interior showing diagrammatic section of the Haweswater Aqueduct in coloured metal sections on a sycamore background

THIS building is the terminal point of the 82 miles long Haweswater Aqueduct recently completed at a cost of £14,000,000, under the direction of Alan Atkinson, M.Eng., M.I.C.E., M.I.W.E., the Engineer and Manager of the Manchester Waterworks Undertaking; and is also the terminatory point of the older two Thirlmere Aqueducts.

The City Architect, Mr. Leonard C. Howitt, M.Arch., Dip.T.P., D.P.A., F.R.I.B.A., M.T.P.I., was requested to design a building







Bas-relief in Westmorland stone by Mitzi Cunliffe

which would not only fulfil the utilitarian purpose of housing the control valves and measuring devices, but would also contain a scale sectional diagram of the line of the Aqueduct in relation to the contours and tablets recording details of the undertaking and the names of the local representatives and officers who have been associated with the project. The building was also required to have a certain monumental character (despite the rather restricted site between a suburban road and the edge of the reservoir), giving appropriate expression to the magnitude and importance of the undertaking.

The external masonry is of Yorkshire Sandstone from Messrs. Jaggar's quarry at Haworth (of Brontë fame) and not only for its own value but because of the associations with the other end of these great aqueducts, the external sculptured and commemorative panels are of Westmorland green stone from the Broughton Moor quarry. The interior walls are lined with filled cream travertine with the skirting and door surrounds of Swedish green marble. All joinery is in teak; the large panel which is the background of the Sectional diagram is in sycamore veneered blockboard. The ceiling is painted dead black to minimize the distraction of the irregular positions of overhead lifting beams.

The dominating feature of the exterior is a great bas-relief 41ft 6in by 16ft designed and carved in Westmorland green stone by Mitzi Cunliffe. This sculpture symbolizes the origin and course of the aqueduct and pays tribute to the men who constructed it.

The commemorative panels are below and include space for the recording of further developments in the future.

The cost of the building (not including the concrete sub-structure and water engineering works), is approximately £27,000. The General Contractors were G. & J. Seddon Ltd., of Little Hulton, Lancs., and the Masonry Sub-Contractor was B. Kendall, of Newby, nr. Lancaster.

Mr. MICHAEL PATTRICK'S ADDRESS AT THE A.A. PRIZE-GIVING

UNFORTUNATELY I was not able to be present at Bedford Square when Michael Pattrick, Principal of the A.A., delivered his address to the students at the annual prize-giving. If you were in the same unfortunate position we missed one of the all too few speeches which are not only worth listening to but which contain much food for thought. I have, however, been privileged to read a copy of his address and study the points which he so ably puts forward for consideration.

Mr. Pattrick took the opportunity to express his views on the problems of architectural education outside the A.A. I hope his views will be widely read, and what is more important, bear fruit. Do not, because it was an address on architectural education, consider that it was only meant for the further consideration of the Board of Architectural Education. It was intended for you as a practising architect and also you, Sir, in a Local or Central Government Architectural Department. In fact, his remarks are applicable to any of us whether we be fully qualified or students.

This is the time of year when one gets waylaid in the club or over morning coffee by a fellow architect who has just returned from a tour abroad, and one is supposed to listen attentively whilst the virtues of architecture abroad is expounded at length. The one-sided conversation usually ends with, "Why don't we design like that?" I would not be surprised if this question had not been put to Mr. Pattrick on more than one occasion until he could contain himself no longer.

"We often hear complaints that the prestige and status of architects abroad is much higher than at home," he remarked if this is true and he thought it was, "we have no one but ourselves to blame." How right he was. We try to blame the times we are living in, the client, the lack of money, the war and everything else but ourselves. How does he justify such a bold statement?

"The whole conduct of the profession is controlled by architects. We are not hampered by outdated laws nor are we tied to any moribund academy." But in view of this, he felt, we had done very little ourselves in the last twenty years to improve the standard of training. You may doubt this statement if you have recently passed through a school of architecture but I, like Mr. Pattrick, doubt if there has been any improvement. Today the majority of those qualifying do so without any form of full time school training at all and I am almost certain that they are still struggling along as their fellow sufferers did twenty years ago. Have correspondence courses improved over the last twenty years? I leave you to judge. Who is to blame for this lack of progress? Mr. Pattrick quite wisely does not answer this question directly, he does, however, point out that, "the Board of Education at the R.I.B.A. has naturally been rather concerned about the lack of progress in training; but there has been too much insistence on their role as an examining body and one would like them to play a much more positive part in education." Here is a lead which I feel sure the Board will seriously consider.

How can they improve architectural education? "Improvement can only come when it is possible for all students to spend part of their training at full-time study in a school." These are not my words but Mr. Pattrick's, but I agree with him.

After making this point he touches upon a subject which has been worrying many who have been considering architecture as a career for their child. After 1962 a student must have two years practical experience in an office before qualifying. Add five years at school, plus two for national service, as he states, "the whole business is exceedingly long." If this is to remain the pattern there is a need for a careful regulation of the different parts.

Mr. Pattrick, unlike many speakers, does not make a statement such as the above and leave his audience to think of the answer, a favourite trick among speakers, but supplies you with his suggested solution.

"It might seem strange," he declared, "at a time when building is becoming more complex, to advocate a condensed or shortened course, but in architecture, æsthetic maturity does not come after four, five or even seven years, and if one expected the poor student to be word perfect in all the technical subjects, then he would never leave school at all! The length and timing of the course must be arranged so as to retain a continuing enthusiasm, for this is the only real spur to creative ability. Rates of development vary, but for nearly all students it is very slow after the fourth year, and it is common knowledge in every school of architecture that the thesis in the fifth year is, for quite a number, nothing more than just another long design subject."

I do not think any student who has passed through a school will disagree with him on the important point of retaining a continuing enthusiasm. I have a faint suspicion from my own student days in a London School of Architecture that the lecturers had an equal difficulty.

Regarding the thesis in the fifth year I paid a special visit recently to inspect an exhibition of theses and to my mind they were as Mr. Pattrick quite rightly states nothing more than a "long design subject." To my mind a thesis more on the lines of that required for the external final might be of more benefit to the student.

I hope Mr. Pattrick's suggested solution will receive the consideration of the Board which it deserves and that was that those of real ability be allowed to pass to office training at the end of their fourth year and then come back to do their theses when they had had a few years experience. "If this were done," he felt that, "we could expect the theses to be nearer the true meaning of that word—something in fact which might prove to be a real contribution to knowledge and which was not only valuable to the student but a help to those who follow."

I can see one difficulty in this suggestion. Once a student has left school and commenced to earn, he involves himself in certain commitments and he would find it difficult to go back to a non-earning state even for a year.

I wonder how many architects who left a school of architecture twenty years or more ago would admit that in certain aspects of design they feel rusty, and would welcome an opportunity to take a refresher course. Mr. Pattrick puts this very tactfully, by saying, "there should be more opportunities for post-graduate research. Much of the work which has to be done requires men of mature outlook who should be given an opportunity to leave practice for a period and assist with education."

I admire the frankness of some of Mr. Pattrick's remarks, for instance, "to stick to teaching for too long may lead to staleness." Don't say it aloud but you can no doubt think of someone who fits this picture. He did follow this remark up by saying, "but every school should have a few instructors whose total commitment was

to the school and whose work was a mixture of research and instruction, for these ought to go hand in hand. In my view these posts should be the most highly paid, the most trusted and the most sought after. They should be given only to those who had that rare gift of acquiring knowledge and also the ability to impart it." This ability to impart is very important and unfortunately is not always given sufficient weight when appointing a lecturer as it should.

How many of us are unable to stand back and consider our problems from a distance because we are so immersed in the day to day job. Mr. Pattrick has obviously stood back from the every day job of education and in so doing has discovered, "we know really very little about the teaching method." I feel he has hit upon a fundamental error of the whole system when he stated that they have "learnt quite a bit through experience, but the experience is gained on an entirely orthodox system of studio design subjects."

What is the solution? I feel that it is to be found, to a certain degree in a later passage in Mr. Pattrick's address when he said, "We ought to pay more attention in the School to the students capabilities and interests in other things besides design. The good architect is a composite person and he must be trained in leadership and organization and other less easily defined things." I have been trying to write the same idea about the present-day teaching of architecture but up to now have felt rather like a voice in the wilderness.

You may well say this idea of trying to train a would-be architect in leadership and organization is all very well, this has been the aim of the schools for years. Well, I would never have believed it. I was always under the impression that the idea was to stamp the word design on him from the day the pupil entered until he left.

How can this change in architectural education be achieved? I believe the A.A. have got one solution. They have introduced a modified form of unit systems. Their scheme is to break down, say, fifty students in each year into a series of small parallel units with about fifteen students in each. These are put under the charge of a unit master who stays with the same unit for about a term and a half. In this way the staff get to know all their students both better and quicker. These small classes allow a much more intimate and informal type of instruction. As Mr. Pattrick stated, debate and discussion are often preferable to formal lecturing, particularly in a subject so diverse as architecture.

This system has been on trial for a year and the results have confirmed the students and staff that it should be continued.

There is a very important point made towards the end of Mr. Pattrick's address which may have passed unnoticed by his listeners and it needs emphasizing.

"If we are to improve, both parents and teachers must allow the term 'probationer' to have its proper meaning. Not all those who wish to take up architecture are suited to it, and I can think of nothing worse than to go through life knowing oneself to be a bad architect."

"In the present system the probationary period is three years, and because so much time and money has already been expended, those who fail are usually pushed and crammed until they eventually pass their intermediate. The same process may be repeated at the finals, and once again, a potentially able doctor, teacher, builder or business man has been pushed into a life-time job to which he was never suited and is not likely to enjoy."

"However carefully the selection is made at the entrance examinations, one can only make a true assessment of potential ability if all applicants would come to a school for one year on trial. The majority would, no doubt, continue, but for those who showed no aptitude at all, there would be a chance to change their career in time."

How true. It should not only apply to schools of architecture but to all who are hoping to become architects.

I hope that the points raised by Mr. Pattrick are given careful consideration by the Board of Architectural Education and I feel sure nothing but good for the future of architecture and architects would emerge.

M. E. TAYLOR, A.R.I.B.A.

Vibrated Concrete and the Architect

J. M. PLOWMAN, B.Sc., Ph.D., A.C.G.I., D.I.C., A.M.I.C.E.I.

THE ten years which have passed since the end of the war have seen a great increase in the use of reinforced concrete for the construction of public buildings, warehouses, schools, etc. The major reasons for this expansion may be said to have been:

(a) A shortage of structural steel;
(b) Great improvements in concrete technology.

Widespread approval has been accorded to new methods of construction such as prestressed beams, shell roofs and precast wall and roof units, to mention but a few. With the removal of restrictions on building, it is obvious that there will be a further expansion of this section of the civil engineering industry; architects will wish to make themselves conversant with the new techniques applied to concrete in order to take full advantage of the possibilities thus opened to them.

Many papers have been published on the new forms of construction and most architects are aware of their potentialities. The author does not propose to repeat what has been said and is well known, but to discuss from the architect's point of view a subject which has received scant attention. Published articles on Vibrated Concrete have been specialized and of interest to only a limited number of engineers; having been responsible for a large proportion of such articles the author would like here to consider the broader aspects of the subject which will interest the architect.

The greater the amount of water in a concrete mix the weaker the resultant concrete will be, but the easier it will be to compact. This ease of compaction is called workability, and for our purposes may be expressed as the amount of work required to fully compact a unit weight of concrete. The greater this quantity of work the less the workability and the stiffer the mix. For prestressed beams and many other applications there is a continued demand for concrete of greater strength (a normal reinforced concrete beam will carry 76 per cent more load if the concrete stress is raised from 1,000 lb/in^2 to 1,500 lb/in^2). This increase in strength may be obtained by reducing the water content, but obviously there is a limit to this reduction when the mix becomes so stiff that compaction by hand is impossible and we get honeycombed concrete with an actual loss in effective strength. It is the pockets of air and water in the concrete which cause the loss in strength; the denser the material the stronger it will be. The compaction of stiff concrete by vibration may be explained by a simile from childhood: a tin when filled with boiled sweets defies all efforts by pushing fingers to make room for more; the sweets have formed natural arches which strongly resist any force from above but which may be readily displaced by small forces

Vibrated Concrete and the Architect

below. If, however, the tin is shaken the sweets move readily into new positions and occupy less space. In compacting concrete the shaking is replaced by vibration which destroys the naturally formed arches made up of the larger pieces of aggregate.

By vibrating the concrete we are able to compact mixes which contain so little water that it would be impossible to compact them by hand methods. If the water content is decreased beyond a certain point, however, it is again impossible to compact the concrete and a reduction in strength occurs. This may be shown diagrammatically in Fig. I from which the considerable increase in strength achieved by using dry mixes with vibration may readily be seen. It is now necessary to consider the properties of vibration and their effects on the concrete mix:—

(a) Frequency of vibration;
(b) Acceleration of vibration;
(c) Direction of vibration;
(d) Duration of vibration.

(a) *Frequency*

The greater the frequency of vibration the less the time required for compaction; also, to a less degree, the greater the strength. The smaller the size of the largest particles in the mix, the greater the frequency which is needed to achieve compaction.

(b) *Acceleration*

This property is always measured as a multiple of the acceleration which gravity imparts to any falling object. Thus if a mass of concrete has an acceleration of 10g its speed is increasing at a rate ten times as fast as if it were allowed to fall freely. It has been shown elsewhere that the strength of concrete increases as the acceleration of vibration increases and that there is a minimum value of acceleration below which the concrete remains uncompacted. It should be emphasized at this point that when talking of acceleration it is the acceleration of the concrete particles that is referred to and not that of the vibrating equipment. When concrete is vibrated in a mould the acceleration at the centre will be less than that at the outside due to the absorption of energy by the plastic mass of concrete in between. It is necessary, therefore, to make sure that this acceleration does not fall below the minimum value required for compaction which is approx. 2½g. If a lower acceleration occurs then the centre of the block will not be compacted and will remain much weaker than the surrounding concrete. It will be agreed that this is not a desirable state of affairs for a load bearing material.

It is normal procedure to specify an acceleration of 10g or more for large masses of concrete to allow for the loss as explained above, with slightly lower values for thinner sections.

(c) *Direction*

Vibration may take place in one, two, or three directions at once according to the type of vibrator; this is not of great importance to the architect and mention will be made of its effects in the consideration of mix design and equipment.

(d) *Duration*

Strength of concrete (which is vibrated) increases with the duration of vibration to a maximum, after which no further gain in strength is noted for however long the vibration be continued, as shown in Fig. II. It will be seen that as the curve rises steeply any reduction in time below point *a* will result in a considerable loss in strength. All vibration should therefore be continued for a little longer than the calculated minimum time if the highest strengths are always to be achieved.

It has been found that the time required for compaction is only affected by the quantity of water in the mix and is constant irrespective of the proportion of cement. The time required for full compaction may be determined from curves such as Fig. III which are true for all mixes having a similar aggregate grading. When calculating the time required it must be borne in mind that deep sections require more time than shallow sections. The question that has now to be answered is "How can you tell when the time of vibration is sufficient?" Fortunately it is not necessary to carry out exhaustive tests; with a little practice the point *a* in Fig. II can be determined within, say, 15 secs visually, by noting when the air bubbles cease to reach the surface of the concrete. In drier mixes and with deep sections this is not quite so easy since the bubbles are expelled more slowly; experience should, however, enable an estimate to be made within 45 secs.

As one would expect, vibration is not an unmixed blessing; certain requirements must be fulfilled if the results are to be satisfactory. Briefly, these may be stated as air-tight moulds and correct mix design. If small gaps are left in the moulds then air will be sucked in by the movement of the concrete and the resultant casting will be full of holes like Gruyère cheese. Further, some of the fine mortar may leak out, leaving insufficient to fill the gaps between the larger stones. The design of the mix must be considered more closely than for hand placing to obtain the optimum results. Much of the water in a concrete mix acts as a lubricant during placing, each particle of sand having a thin coating of water. The smaller the sand particles the larger will be their surface area for a given weight, and therefore the greater the amount of water required to act as a lubricant. It is this water which is undesirable since it reduces the strength; therefore it is advantageous to reduce the amount of the fine sand, but sufficient must be used to fill the gaps between the larger stones.

Vibration enables the sand content to be reduced below that possible with hand placing, but care must be taken that the sand does not contain too large a proportion of very fine material lest Rotational Instability occur. When this takes place the concrete mix in a mould rotates, sucking in air at one

GRAPHS

The dotted line on the left indicates vibrated concrete

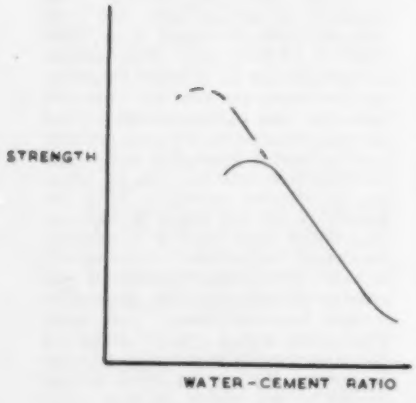


Fig. I

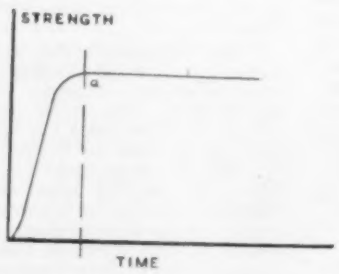


Fig. II

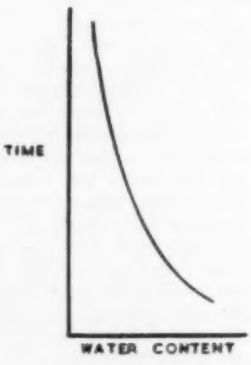


Fig. III

corner, resulting in a honeycomb concrete. The remedy is quite simple and completely effective, the grading being altered to reduce the proportion of very fine sand.

Vibration should not be used on wet mixes which may easily be compacted by hand or segregation may take place.

Having considered briefly the reasons for vibrating concrete the means should now be studied. These are divided into three categories:—

(A) Immersion vibrators;
(B) Shutter vibrators;
(C) Table vibrators.

(a) Immersion.

Under this heading are included poker and needle vibrators, which are held in the hand with the body of the vibrator buried in the concrete. The vibrations are caused by an eccentric weight rotating at high speed, driven by a flexible drive from a petrol or electric motor. Some units dispense with the drive and have the motor mounted on the head of the vibrator. Obviously the larger the eccentric the greater the power available, but also the larger will have to be the buried portion of the poker in order to contain the eccentric and its bearings. The size of the unit is of importance when dealing with heavily reinforced beams with bars close together, and it is in this type of beam that the greatest power is required, since the congested steel bars offer added resistance to the compaction of the concrete mix.

(b) Shutter.

As the name implies, these are mounted on the outside of the shutter or mould, and vibrate both the mould and the concrete within. The usual fault of these lies with the user in that insufficient are used to give a satisfactory acceleration to the concrete. Two types are in use, an electro-magnetic and an eccentric type, driven by electric motor. The former has several advantages over the latter as

(a) it has no bearings to wear out under the heavy loading;

(b) the acceleration can be controlled by the operator;

(c) any number of units may be run with the same frequency and in phase, whereas the mechanical eccentric types frequently get out of step and oppose one another.

(c) Table.

These units are used for making blocks of precast concrete which are to be placed in position at a later date. They consist basically of a rigid steel table mounted on flexible supports and vibrated by an eccentric or electro-magnetic unit similar to those described for shutters. These are, usually, considerably larger in size and power output. For the full power to be applied to the concrete it is essential that the mould be firmly attached to the table; if this is not so the mould will bounce about on the table and a low acceleration low-frequency vibration will result. Eccentric types of vibrating table tend to give a rotating motion to the concrete which encourages Rotational Instability, whereas electro-magnetic vibrators have a purely vertical action. Tables can be obtained to vibrate any load up to five tons, but it must be emphasized that although the smallest table will probably carry five tons and vibrate it, the acceleration will be very small (0-1g), and therefore no table should be so loaded as to reduce the acceleration of the concrete below the desired value.

The requirements for high-strength vibrated concrete are as follows:—

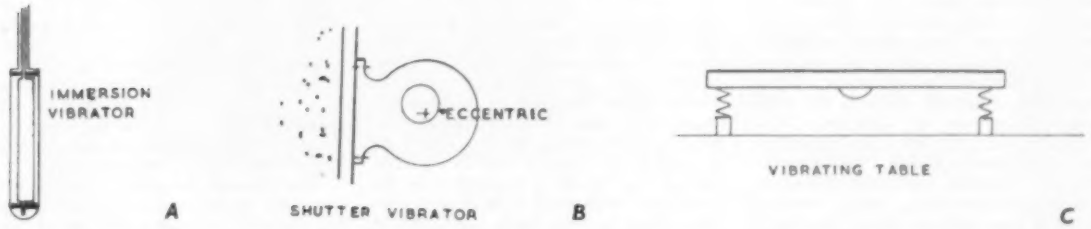
1. Suitable grading to avoid rotational instability;
2. Sufficient vibrator power to ensure adequate acceleration of all parts of the casting;
3. A minimum acceleration of 2½g, *inside the concrete;*
4. A frequency not less than 4,500 v.p.m.;
5. Duration of vibration sufficient to ensure full compaction;
6. Airtight moulds;
7. Moulds rigidly attached to vibrating table;
8. Adequate maintenance to bearings, etc., of rotating eccentric type of vibrator.

With this technical background we may now look closely at the effects vibrating concrete may have on design. First, since it is a mechanical process, it is less liable to large variations in the degree of compaction compared with manual placing so that the actual strength of the resulting concrete may be obtained more exactly. As an illustration of this, test cubes cast by hand may vary from the average by as much as 20 per cent, whereas vibrated cubes have a variation of approximately 8 per cent. In other words, we have a much more reliable material with less need for a large factor of safety to cover the possible variations in strength.

With the greatly increased working stresses made possible by the strongly vibrated concrete, spans of slabs and beams can be considerably increased or alternatively much lighter sections may be used. Columns will carry greater loads and therefore it is possible to space them at greater distances apart allowing for an increase in the unrestricted floor area available. Since the proportion of Dead Load to Live Load is high in concrete construction any reduction in weight of concrete results in a considerable increase in the carrying capacity of the Live Load.

Vibrated concrete has a modulus of elasticity approximately twice that of ordinary concrete placed by hand, resulting in a smaller deflection of beams and slabs. This smaller deflection means that there is less chance of finishes, plaster, woodwork, etc., cracking. Further, the concrete is more dense and therefore less permeable to water, giving greater protection in basements, etc., against dampness. Precast units of good-quality vibrated concrete will stand the knocks of handling in transport and erection more readily than lower grades of concrete, and there will be fewer resultant blemishes to sharp arrises, etc.

All these points may be summed up by saying that vibration gives a much better quality product which well repays the small extra cost involved.



A The immersion vibrator should be slowly inserted into the concrete and slowly withdrawn to avoid the formation of trapped air, the very thing the vibrator is trying to eliminate

B All shutter vibrators should be very firmly fixed to the shuttering in order that its action can be fully realized. Simply hammering the outside of the shutter with some mechanical tool does not fall within the field of vibration

C The foundations under a vibrating table should be isolated from the rest of the structure to avoid any possible deterioration due to continuous vibration when the table is run all day

Scottish Housing Handbook: Part V: Tendering for Local Authority House Building

The principles which should normally be followed in taking tenders and in drawing up specifications and schedules of quantities for local authority house building are set out in Part 5 of the Scottish Housing Handbook and have been issued to local authorities by the Department of Health for Scotland (H.M.S.O., price 1s 6d).

Part 5 of the Handbook contains information about various aspects of tendering procedure, statutory requirement in conditions of contract, price variations in tenders, and the preparation of specifications and schedules of quantities.

A general specification—replacing the Department's pre-war "General Specifications for State-aided Housing"—forms Appendix I to this part of the Handbook. This general specification is not exhaustive, its purpose being to assist local authorities and their technical advisers by indicating generally types of materials and standards of workmanship and efficiency appropriate to the normal local authority house.

To ensure an appropriate standard of materials and workmanship this Part of the Handbook recommends that specifications and schedules of quantities should, wherever possible, refer to the appropriate British Standard Specifications and Codes of Practice. Appendix II lists the British Standards and Codes of Practice suitable for housing work.

Other parts of the Scottish Housing Handbook, dealing with siting and layout of houses, roads and services, house design and equipment, and administrative procedure, have already been issued.

M.o.W. Films on Building

The first six films made for the Ministry of Works under the Conditional Aid Programme have just been finished. Their success may be gauged from the fact that they have already been accepted by the other countries in the European Productivity Agency for showing in their countries with dubbed commentaries. This qualifies the Ministry for a further grant for film-making. The six films are of two kinds. Three deal with a specific subject, the titles are: Designing a Concrete Mix, Vibrated Concrete on a Building Site, and Soil Cement Roads. Without providing a complete text-book of instruction these three films, with a running time of ten minutes each, provide a clear and precise introduction to their subjects without "Talking Down." The other three, Site Handling of Materials, Factory-made Building Interiors, and Changing Practices in Building, had subjects too general in character to achieve the crispness of the others. The films were well made and contained a considerable amount of interesting material, less digestible perhaps, but food for thought none the less.

16mm. copies will be available by the middle of September and may be borrowed from Central Film Library or on application to the Regional Technical Officers of the M.o.W. The films were made by Anglo-Scottish Pictures, Ltd. The producer is to be congratulated on his omission of the traditional cacophony at beginning and end of the films. Apart from the commentary the films have no other sound, background noise or music to distract the attention.

The cost was under £7,000.

Photos Noel Warner

Sentinel House, Southampton Row. Architects, Messrs. T. P. Bennett & Son. General Contractors, Sir Robert McAlpine & Sons Ltd. Completion date, September 1. Built for Messrs. Marcus Securities (Kingsway) Ltd. to be occupied by the Air Ministry

Borough Polytechnic

Some months ago, the paint trade and ancillary industries were approached by the Borough Polytechnic Old Students Association with the object of obtaining funds to purchase equipment to make the Borough Polytechnic Paint Technology Section the finest of its kind in the country. The appeal, while falling short, slightly, of its target, nevertheless enabled a large quantity of modern apparatus to be obtained. In order that the new equipment may be inspected, the Department of Chemistry and Food Technology, of which the Paint Technology Section forms a part, will welcome industrial visitors in the week commencing September 12. They will have the opportunity not only of viewing the equipment, but of discussing the courses being offered, as members of the teaching staff will be available from 10 a.m. to 5 p.m. to meet directors, managers, and personnel officers. The official opening of the new laboratories will be carried out by Rt. Hon. Malcolm McCorquodale, who recently received a barony.

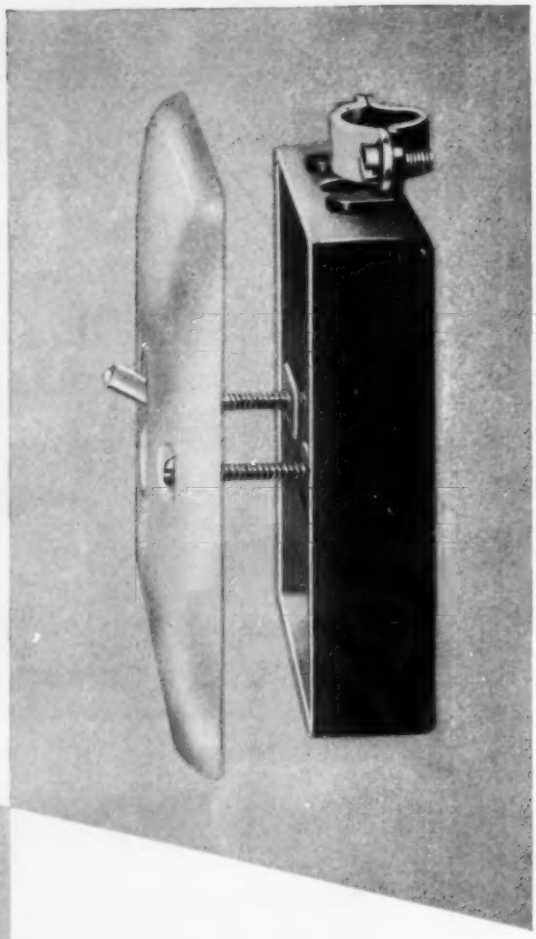
In addition to the well-known part-time courses in Paint Technology held in both the day and evening sessions, there are being offered full-time courses for graduates or those with correspondingly high academic training. These courses, commenced due to demands from overseas, will not only assure students of the full training leading to the City & Guilds' Diploma, but will also enable them to carry out research work in related subjects as part of their paint projects.

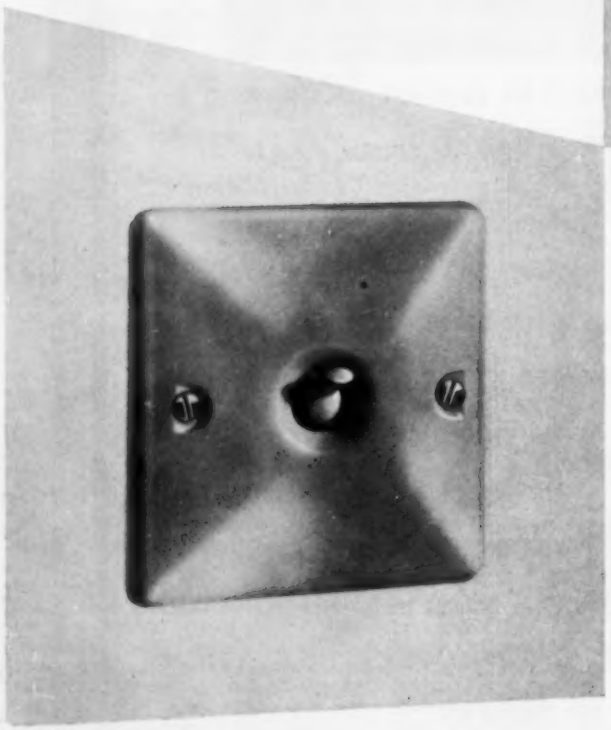
The new equipment will not only enable students taking regular courses to become practised in the most modern methods, but it will also enable special lectures to be given. A course of six such lectures is being given by specialist lecturers from the user industries later in the autumn on the assessment of paint and varnishes.

The Borough Polytechnic, which has just been recognized as an Institution for Higher Technology, has as its aim to serve the industries with which it is most closely associated. Those in the field of Chemical Technology are Paint and Plastics, and Food Sciences. There are facilities available for courses in all these subjects, leading to higher degrees or to technological awards such as the insignia of the City & Guilds.

'MUTAC' silent

PLASTER DEPTH A. C. SWITCH and SWITCH BOXES





7/16" adjustment

is provided by the ¾" x 4 B.A. Screws which are supplied with each switch. Full particulars of these switches and boxes are given in Publication S.2544.

'MUTAC'

SILENT A/C FLUSH SWITCH

A G&C PRODUCT

'MUTAC' for a lifetime of trouble-free service

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2

Mews Flat Conversion

architect: FELIX DARNELL,
A.R.I.B.A., A.M.T.P.I.

THE conversion of an existing garage and flat into a small town house with three bedrooms was complicated by the fact that the existing building was enclosed on three sides by party walls. Problems of lighting and ventilation were solved by careful planning and the use of a small area at the back. The solution, the "Open Plan," was evolved by reconciling the conflicting claims of use for the road frontage and the main source of natural light. A garage, however, was also required.

The living area occupies the greater part of the ground floor area, completed by a kitchen and cloakroom. The staircase, which is of open construction to allow light to filter through from the windows and skylights of the upper floor, was sited on the rear wall of the living room.

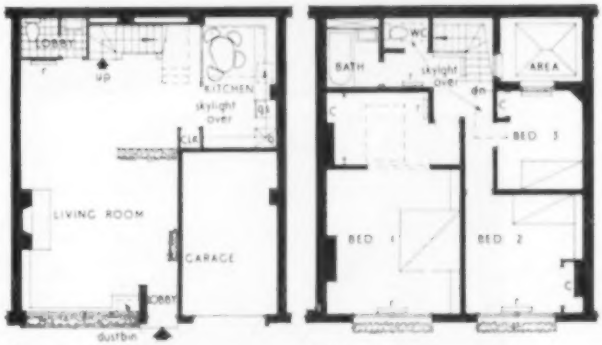
Upstairs there are three bedrooms, bathroom and separate w.c. The owner's bedroom is equipped with a built-in wardrobe and all have natural daylight through double centre pivot-hung windows.

The services are all internal; the whole house is centrally heated and the gas-fired boiler also supplies the domestic hot water. The open fireplace in the living room is intended to be used on special occasions only and was designed for wood burning.

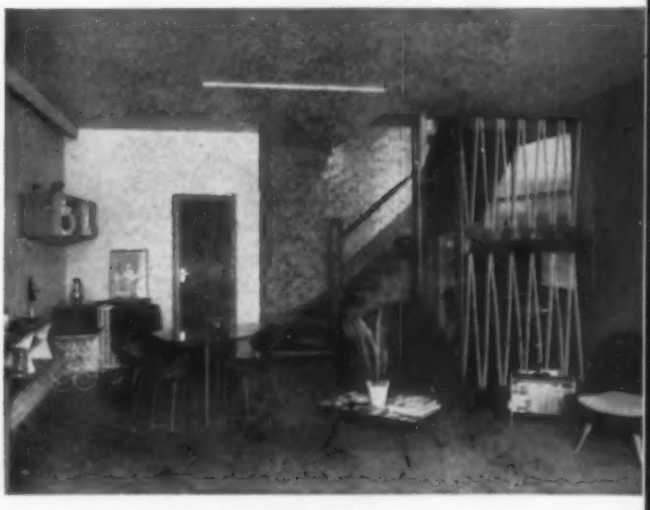
The cost of the construction was approximately £1,500, or £1 per foot super. The general contractor was J. Eban, Ltd.

PLANS Scale: 1in—16ft

Elevation to the mews



GROUND FLOOR FIRST FLOOR



The interior of the living room was designed in association with G. Grenfell Baines, A.R.I.B.A., A.M.T.P.I.

MOSAICS

SERVICES
LIGHTING FITTINGS
B1/88

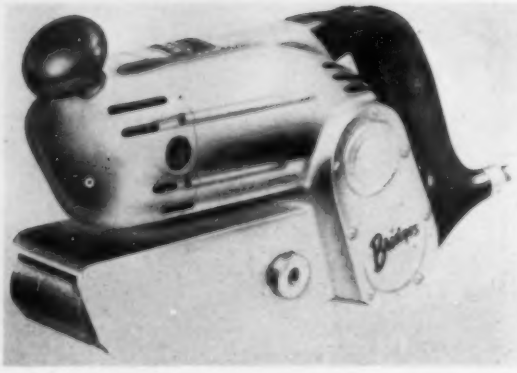
Illustration shows one of a new range of lighting fittings offered by Alton Products of 6 Wendell Road, London, W.12. The reflectors are constructed from 1.5 mm. resin bonded plywood. They are cold formed and retain shape by tension on the brass brackets. Interior surfaces are cellulosed white on a black base; holders and wall plates are finished white; arms and suspensions are in satin or polished brass. The reflectors can be supplied in several colour finishes and the range includes both wall bracket and pendant types.

PLANT
MISCELLANEOUS
E14/14

The "Trolliped" by Angel Truck Co. Ltd., 215 Albion Road, London, N.16, is a safety device to prevent trolleys running back on operators. It is claimed that it can be fitted to any round axle trolley. The striker plate is adjustable so that the necessary amount of spring pressure to ground can be made.

PLANT
MISCELLANEOUS
E14/15

This scrubber/polisher by Truvox Ltd. of 15 Lyon Road, Harrow, Middlesex, is fitted with cylindrical brushes and is designed so that scrubbing may be done in corners and close to skirtings. The tank has a capacity of 2½ gallons and is detachable for filling. The chassis is of cast aluminium. The handle is insulated and the motor is ¼ h.p. capacitor start, induction type of B.T.H. manufacture. Voltage range: 200/220, 230/250 v. A.C. only. Dimensions: width 17in., length of brushes 24in., height of tank 14in plus ⅜in filler cap. Weight 120lb approx.



PLANT
HAND TOOLS
E3/43

The 2½in portable electric belt sander by S. N. Bridges & Co. Ltd. of Parsons Green Lane, London, S.W.6, is available as either universal, A.C. or D.C. type for voltages 110, 200-220, 230-250. The flush side design allows for easy sanding next to uprights. Belt changes can be made in a few seconds. Weight 14lb.

INDUSTRIAL NOTES

● Mr. A. J. Harris, B.Sc. (Eng.), A.M.I.C.E., Chartered Civil Engineer, announces that he has relinquished his appointment as Director of the Pre-Stressed Concrete Co., Ltd., and is now established in private practice at 128, Ashley Gardens, Westminster, London, S.W.1.

● The Central Office of Information is to produce a regular Industrial Cine Magazine, in which stories about British industry will be carried to important export markets.

● Metal Industries, Ltd., announce the appointment of Mr. E. Bruce Ball, C.B.E. as an additional director of the Company.

● The Merchandising Division of The Solartron Electronic Group, Ltd., Thames Ditton, Surrey, is now the appointed Agent for The Consolidated Engineering Corporation, Pasadena, California, U.S.A., and associated companies, for the United Kingdom, Eire and certain parts of the British Commonwealth. The new telephone number of The Solartron Electronic Group, Ltd., is Emberbrook 5522.

● Cantie Switches, Ltd., have established new Branch Offices at 248, West George St., Glasgow, C.2, Telephone Central 3739; 32, Deansgate, Manchester, 3, Telephone Blackfriars 3851. Room No. 31, Sun Insurance Buildings, Collingwood St., Newcastle-on-Tyne, 1, Telephone Newcastle 29171; and 37, Talbot Street, Nottingham. Another Branch Office will shortly be established at Leeds, under the management of Mr. N. Rayner. The managers are respectively Messrs. T. C. Paton, J. T. Jolley, W. K. Freeman and A. E. Royle.

● The Gypsum Building Products Association announce that owing to increased costs outside the control of the industry the prices for 600 and 1,200-yard lots of Plain and Insulating Gypsum Plasterboard have been increased by ¼d per square yard on all despatches made on and after July 27.

● The total of U.K. exports to North America recorded for June was £17.4 million, a reduction of over one-third compared with the average monthly rate of export in April/May.

● Babcock and Wilcox, Limited, The English Electric Company, Limited, and Taylor Woodrow, Limited, will operate as a group to undertake complete atomic power projects of the kind employing gas-cooled, graphite-moderated reactors. This arrangement means that atomic power stations of this type can be built in any part of the world under a single contract.

● The Board of Trade announce that they have made an Order amending the Hire-Purchase and Credit Sale Agreements (Control) Order, 1955. The main change is the increase in the minimum initial deposit from 15 per cent to 33⅓ per cent of the cash price for certain classes of goods. The maximum periods for payment of the balance are unchanged. The classes of goods for which the deposit is increased to 33⅓ per cent include: Space heating appliances, excluding appliances designed to burn solid fuel only, drying cabinets, floor polishers, water softeners and refrigerators.

● After consultation with the Department of Scientific and Industrial Research, the Secretary of State for the Colonies has appointed a Committee to advise on matters of road research for the benefit of the Colonies. Dr. W. H. Glanville, C.B., C.B.E., D.Sc., M.I.C.E., Director of Road Research, has accepted the Chairmanship of the Committee.

A good plan is only the beginning . . .

Many a good plan has been spoilt by lack of attention to detail. Take paint, for instance. For a permanent attractive appearance—a finish that will retain colour and gloss whilst giving maximum protection—only the best is good enough. Such a paint will certainly contain Titanium Oxide, the finest white pigment available, and the basis of all good white and light coloured paints.

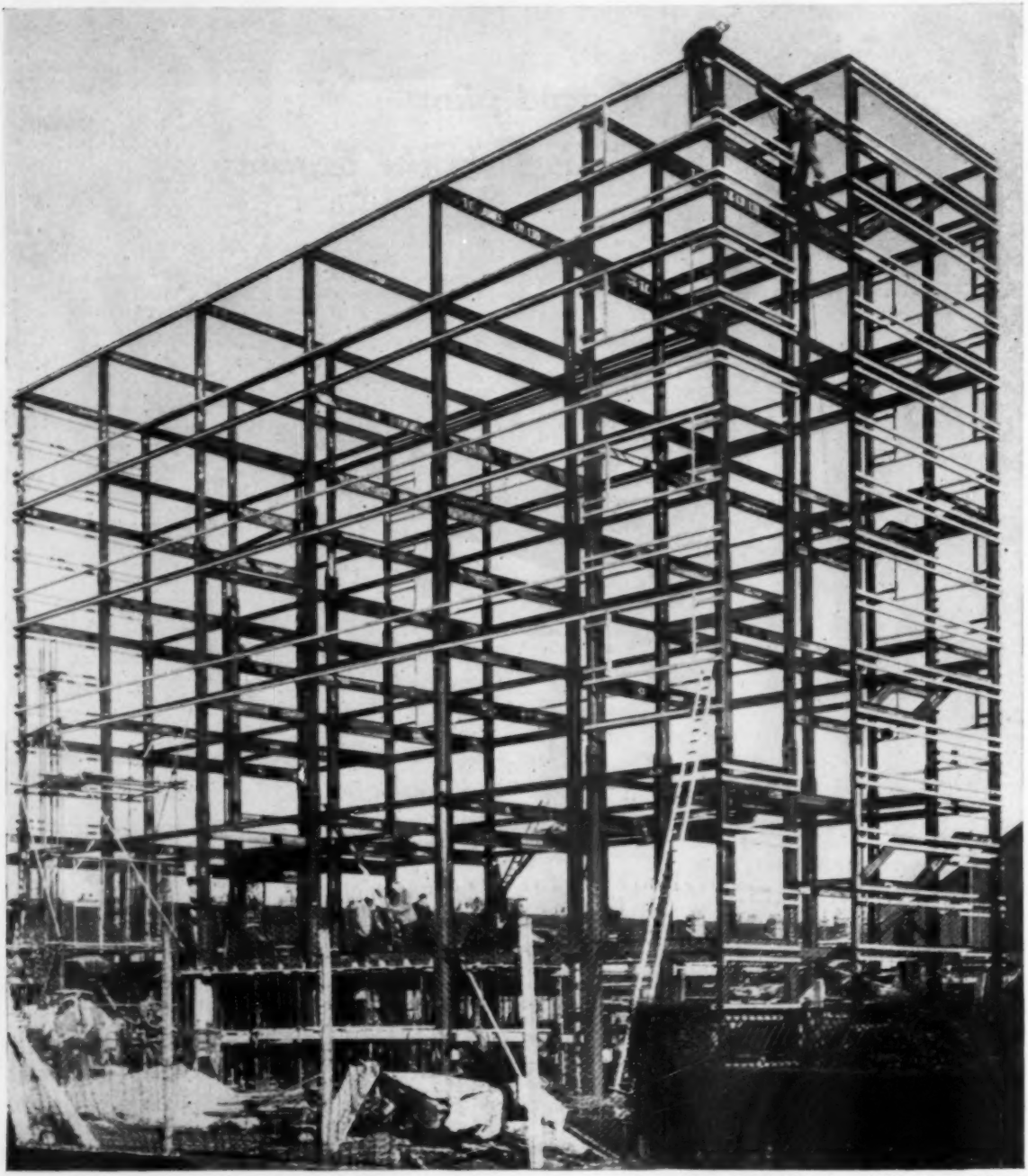
Titanium Oxide ensures brightness, durability and resistance to all weathers—sunshine, rain, frost and smog. It is completely safe too, and can be used with confidence for the kitchen, the nursery and the larder.

Remember, all the best paints contain Titanium Oxide.

B P TITANIUM PIGMENTS

Factories at Grimsby and Billingham and at Burnie, Tasmania. Agents in most principal countries.

BRITISH TITAN PRODUCTS COMPANY LIMITED
COPPERGATE
YORK



Factory for Electronic Instruments Ltd., Richmond, Surrey

This is a *C.A.S. (Industrial Developments) Ltd.* development. Architect: KENNETH ANNS, M.C., F.R.I.B.A.
Consulting Architect: A. B. WATERS, M.B.E., G.M., F.R.I.B.A.
Consulting Engineers: ANDREWS, KENT & STONE. Contractors: C.A.S. (Contractors) Ltd.

STEELWORK FABRICATED & ERECTED BY

T. C. JONES
AND COMPANY LIMITED

THE 600 GROUP

Wood Lane, London, W.12. *Tel: SHEpherds Bush 2020.* Bute Street, Cardiff. *Tel: Cardiff 28786.* Treorchy, Glamorgan. *Tel: Pentre 2381*

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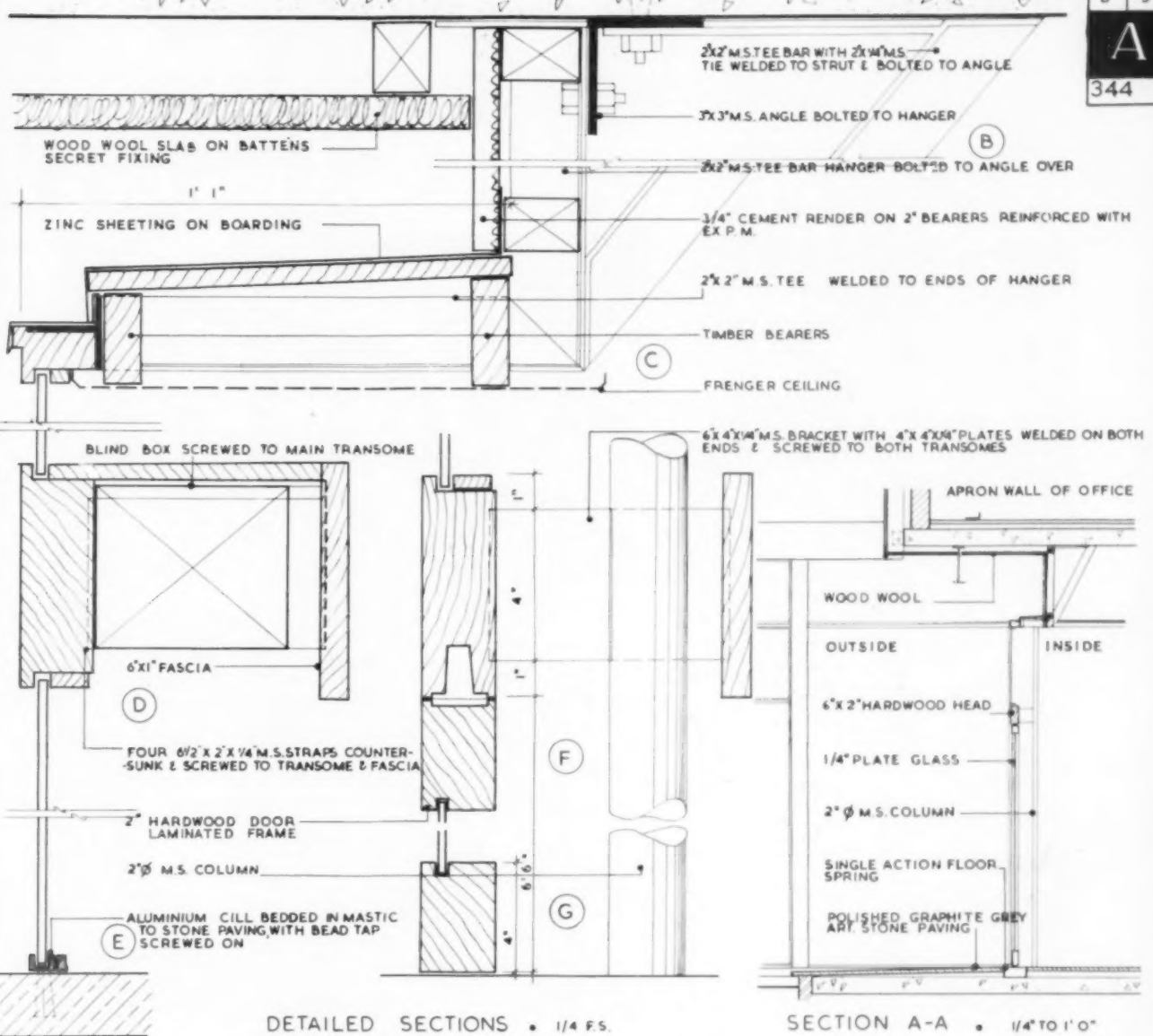
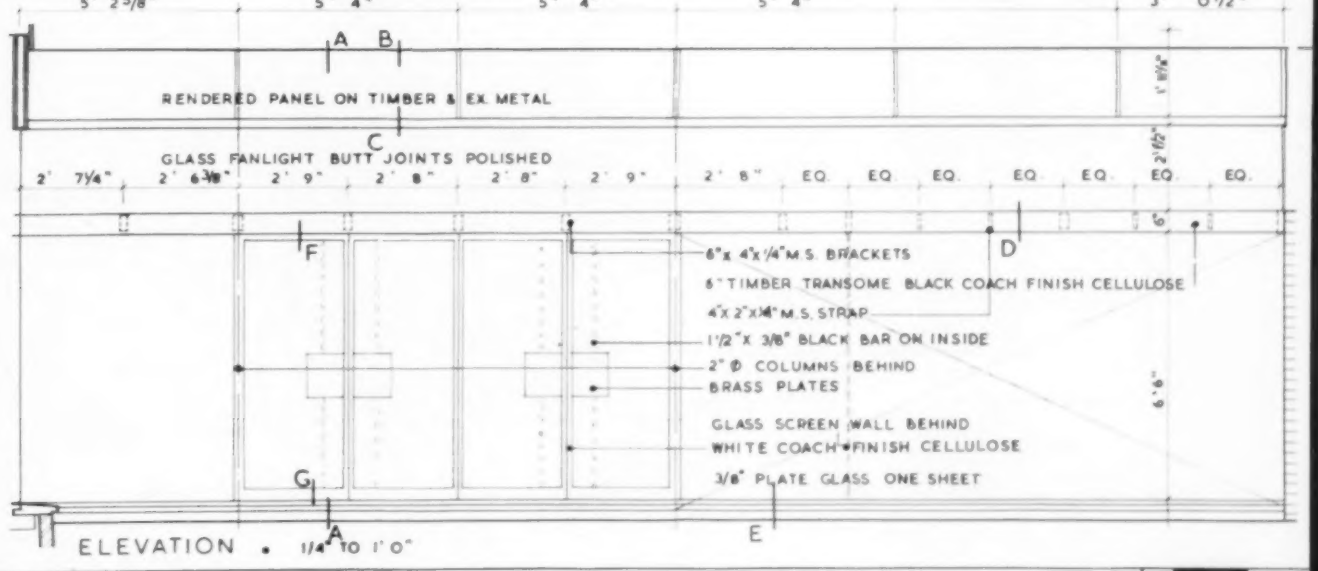


DETAILED SECTIONS • 1/4 F.S.

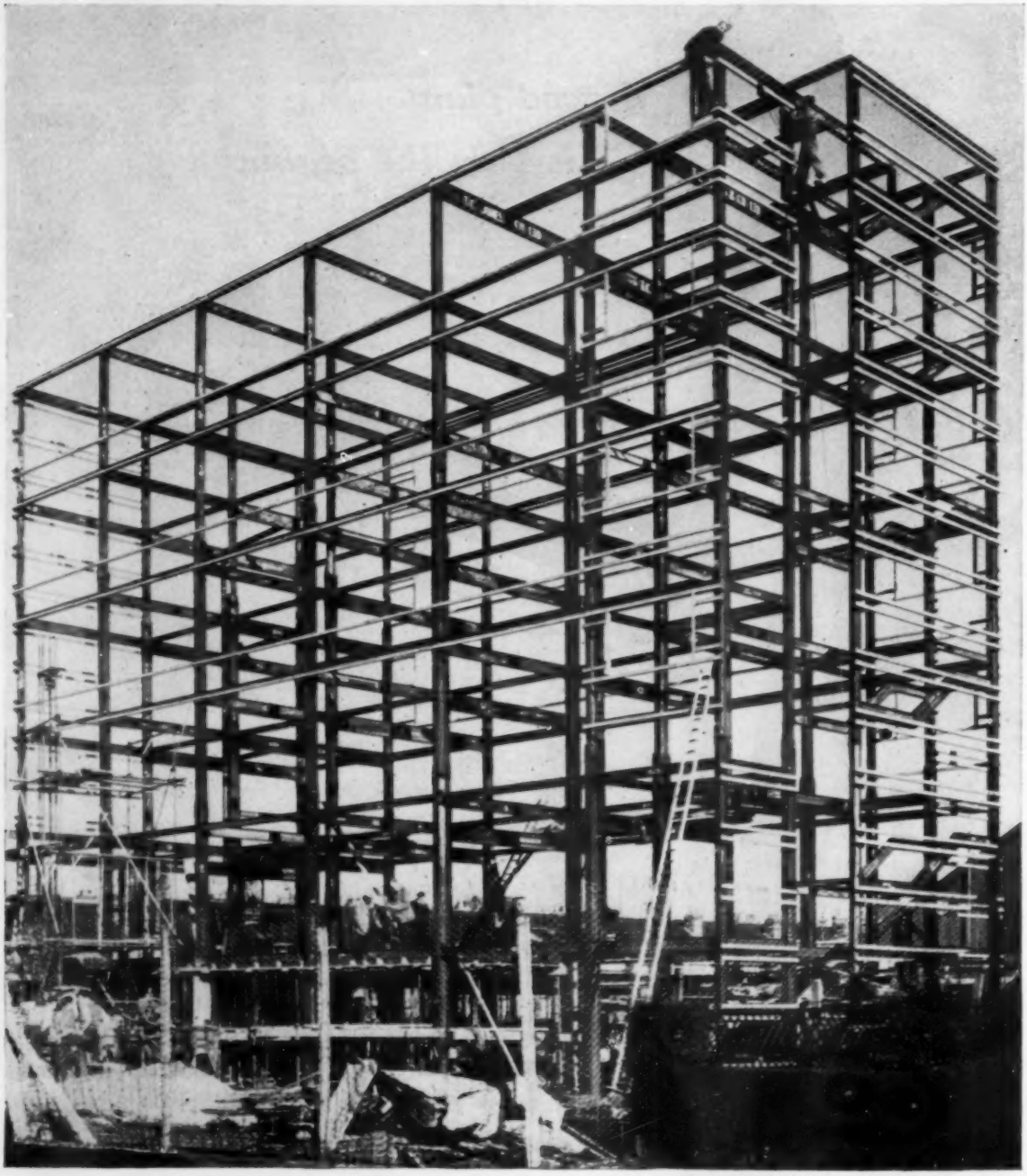
SECTION A-A • 1/4" TO 1' 0"



ELEVATION • 1/4" TO 1' 0"

ENTRANCE, OFFICES, BATH ROAD, MIDDX. • GOODAY & NOBLE

344 A B S



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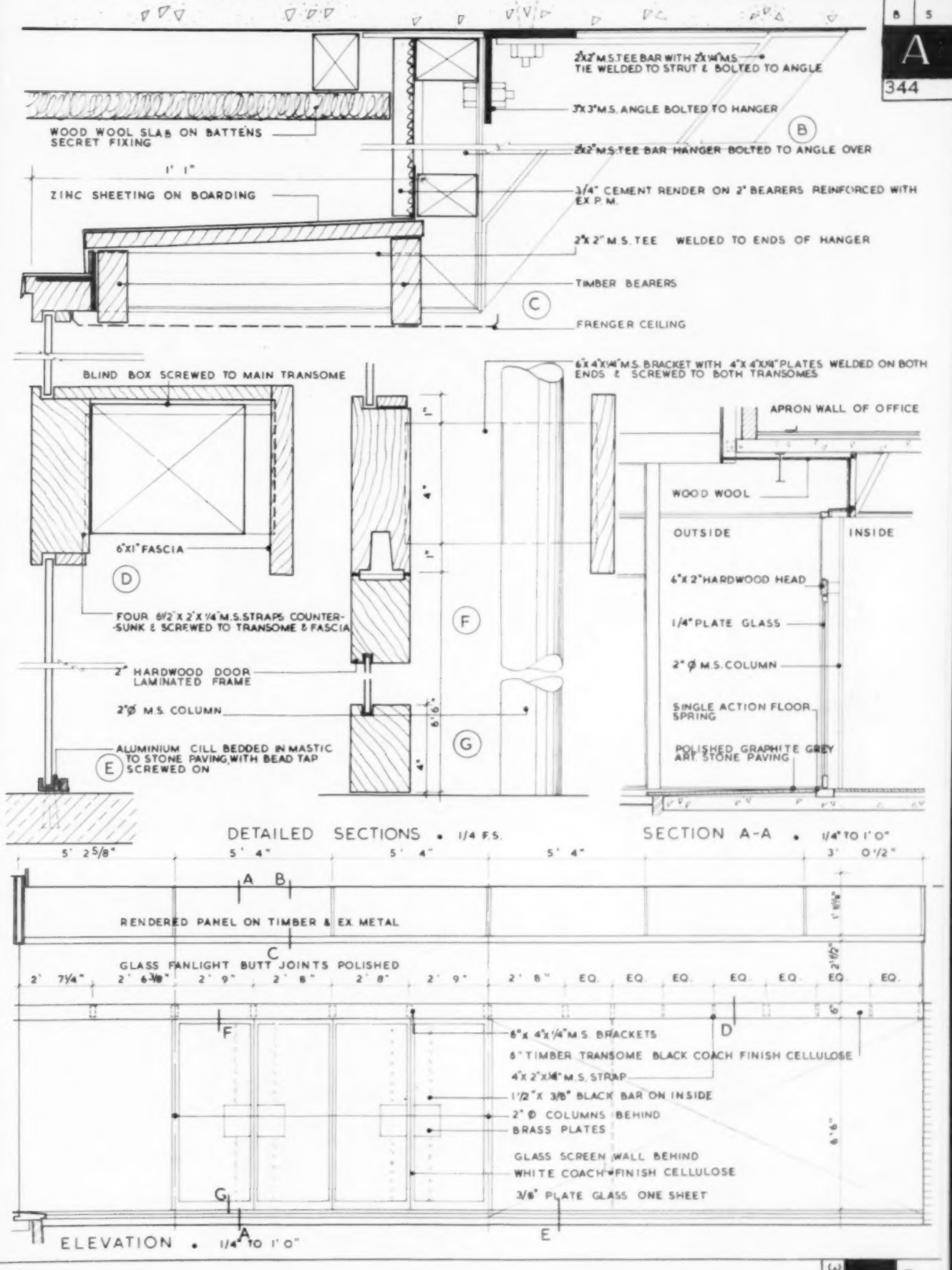

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SECTION A-A • 1/4" TO 1' 0"

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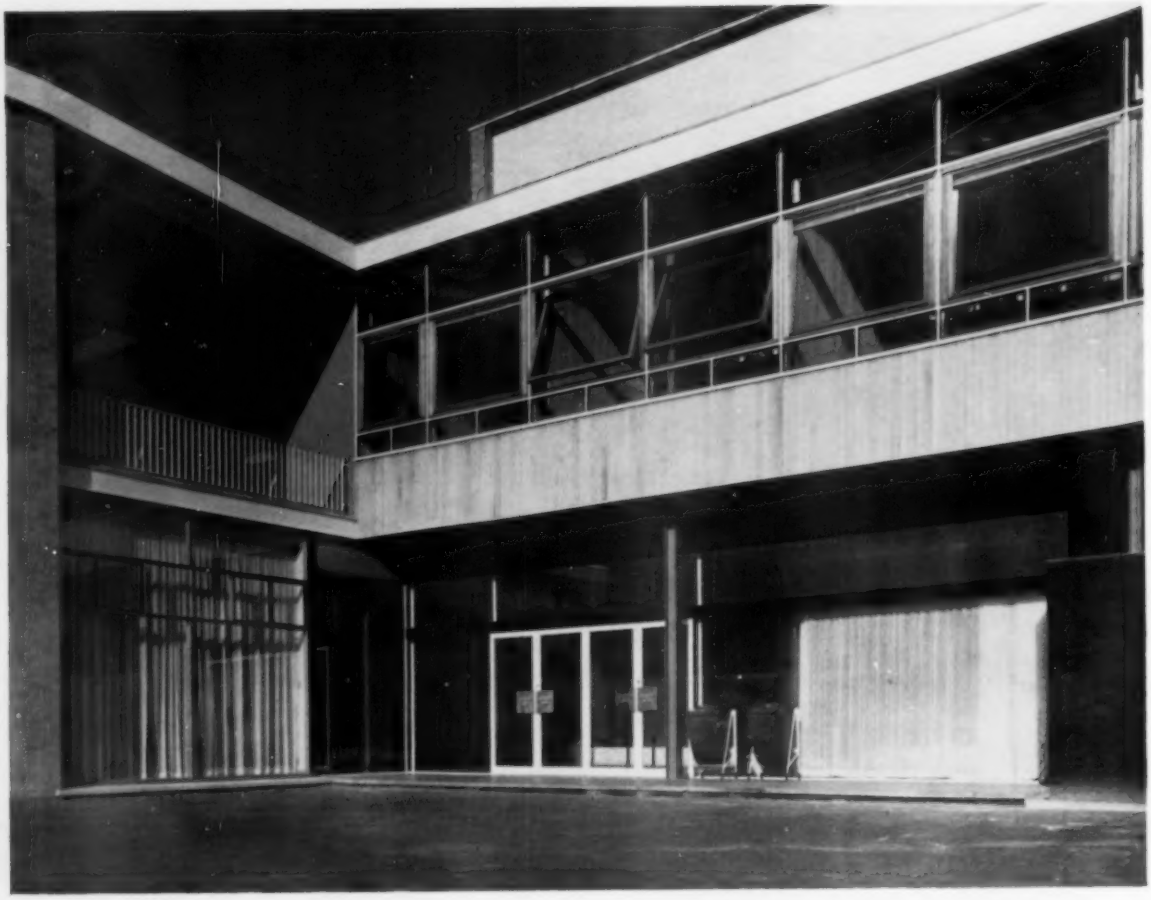

ENTRANCE OFFICES, BATH ROAD, MIDDLESEX

ARCHITECTS: GOODAY & NOBLE

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CONTRACT • NEWS •

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

OPEN

BUILDING

BASINGSTOKE B.C. (a) 39 flats in 3-storeys and 3 bungalows, with site works, King's Road. (b) Borough Architect, Municipal Buildings. (c) 2 gns. (e) Aug. 29.

* * *

BATHAVON R.C. (a) Erection of (1) block of 4 houses at Englishcombe, and (2) 8 bungalows at Combe Down. (b) A. F. Hobbs, 8, Cleveland Place East, Bath, for (1) and H. H. Goldsmith, 18, Gay Street, Bath, for (2). (c) 2gns each contract, cheque payable to Council. (d) Aug. 13.

* * *

BRIGHTON B.C. (a) Erection of (1) 27 houses, (2) 31 houses and (3) 10 houses, North Woodingdean. (b) Borough Engineer, 26-30, King's Road. (c) 2gns each contract. (e) Aug. 30.

* * *

BUSHEY U.C. (a) 22 houses, Little Bushey Lane. (b) Engineer and Surveyor, Council Offices, Rudolph Road. (c) 3gns. (e) Aug. 31.

* * *

CATERHAM AND WARLINGHAM U.C. (a) Pair of houses and a block of 4 flats, Ninehams Road, Caterham. (b) Engineer and Surveyor, Council Offices, Caterham. (c) 2gns. (e) Sept. 12.

* * *

CHESTERTON R.C. (a) Erection of (1) 21 dwellings at Stow-cum-Quy, and (2) 12 dwellings at Graveley. (b) Council's Architect, 93, Hartington Grove, Cambridge. (c) 2gns each site. (e) Aug. 31.

* * *

CLOWNE R.C. (a) 8 pairs of bungalows and 3 pairs of houses, Clowne. (b) Council's Clerk, Council Offices, Clowne, near Chesterfield. (c) 3gns cheque payable to Council. (d) Aug. 13.

* * *

CRAWLEY DEVELOPMENT CORPORATION. (a) Erection of 6 service industry workshops, Stephenson Place, Three Bridges. Approx. cost £13,000. (b) Chief Architect, Broadfield, Crawley. (d) Aug. 15.

* * *

CROYDON B.C. (a) Erection of the second instalment of a technical college. (b) Messrs. Robert Atkinson and Partners, 13, Manchester Square, London, W.1. (c) £1. (e) Aug. 26.

* * *

EAST RIDING C.C. (a) Secondary school at Pocklington. (b) J. H. Napper, 56, Eldon Place, Newcastle-upon-Tyne, 1. (d) Aug. 29.

* * *

EAST SUSSEX C.C. (a) Erection of further classrooms and practical rooms at Oakmeeds Secondary School, Burgess Hill. (b) County Architect, County Hall, Lewes. (d) Aug. 15.

* * *

ESSEX C.C. (a) Adaptation of The Vicarage, Granville Road, Ilford, to form a children's home. Approx. cost £4,575. (b) County Architect, County Hall, Chelmsford. (d) Aug. 13.

FLINT B.C. (a) 42 houses at The Wern, Bagillt. (b) Borough Engineer, Municipal Offices, Earl Street. (c) 2gns. (e) Aug. 29.

* * *

HERTFORD R.C. (a) Erection of 19 houses, 2 small bungalows, and 4 maisonettes and 4 flats, and 8 garages, at Hertford Heath. (b) Council's Clerk, Wallfields, Pegs Lane. (c) £3 cheque payable to Council. (d) Aug. 17. (e) Sept. 7.

* * *

LEYLAND U.C. (a) Erection and completion of 2-storey flats at Lower House Estate, Leyland. (b) Engineer and Surveyor, Council Offices. (c) 2gns. (e) Aug. 22.

* * *

LONDON—CHINGFORD B.C. (a) 12 flats at Old Church Road Estate, North End Development. (b) Borough Engineer, Town Hall, E.4. (c) 2gns. (e) Sept. 1.

* * *

LONDON—ST. MARYLEBONE B.C. (a) Erection of blocks of flats. (b) Housing Director, St. Marylebone Borough Council, 128-134, Baker Street, London, W.1. (d) Aug. 27.

* * *

LONDON—WEST HAM B.C (a) Erection of about 200 tons of second-hand steelwork, being a single-storey building to form central transport depot. (b) Borough Engineer, West Ham Town Hall, Stratford, E.15. (c) £2. (e) Sept. 5.

* * *

MARCH U.C. (a) Erection of a pair of staff houses at the sewage pumping station site, Creek Road. (b) W. S. Pickett, Town Hall. (c) 2gns. (e) Sept. 2.

* * *

NEWPORT B.C. (a) 28 houses, Pan Estate. (b) Borough Engineer, 39, Quay Street, Newport, Isle of Wight. (c) 2gns. (e) Aug. 29.

* * *

N. IRELAND—ARMAGH C.C. (a) Erection of girls' and boys' intermediate schools, caretaker's house and central school meals kitchen, site works, etc., Toberhewney Lane, Lurgan. (b) W. R. Thornton, 9, Beresford Row, The Mall, Armagh. (c) 5gns. (e) Sept. 6.

* * *

N. IRELAND—BELFAST C.C. (a) Erection and completion of 15 flats in 2 blocks, Lisburn Road. (b) Housing Architect, 94, Chichester Street. (c) £5. (e) Aug. 30.

* * *

N. IRELAND — KILKEEL (CO. DOWN). (a) Supply and erection of structural steelwork for an intermediate school at Kilkeel. (b) Messrs. McLean and Forte, 37, Malone Road, Belfast. (c) 3gns. cheque. (e) Aug. 19.

* * *

NORTHALLERTON U.C. (a) Erection of 18 houses in 2 blocks of 4 and 5 blocks of 2, Bullamoor Road. (b) Council's Clerk, Northallerton. (c) 2gns. (e) Aug. 20.

* * *

NORTH RIDING C.C. (a) Erection of a junior school at South Bank, near Middlesbrough. (b) J. Breakwell, 10, Hill Street, St. Helier, Jersey, Channel Islands. (e) Aug. 29.

* * *

PENISTONE U.C. (a) Erection of (1) 14 houses at Westfield Avenue Estate extension, Thurlston, Penistone, and (2) construction of road works. (b) Messrs. Turner and Holland, 4, King Street, Wakefield. (c) 2gns each contract. (e) Sept. 5.

PETERBOROUGH C.C. (a) Erection of (Group 50) 13 pairs of houses, 2 pairs of houses, 13 garages and 9 garages, (Group 51) 6 pairs of houses, and (Group 52) 6 pairs of houses, 3 pairs of houses, 13 garages and 10 garages, at Dogsthorpe North Estate. (b) City Engineer, Town Hall. (c) 2gns. (e) Aug. 29.

* * *

SCOTLAND—EDINBURGH C.C. (a) Erection of (1) 68 houses at Area No. 10 of Comiston housing development, and (2) 26 aged persons' houses at Loaning Road. All or separate trades. (b) City Architect, City Chambers. (d) Aug. 15. (e) Sept. 9.

* * *

SCOTLAND—GLASGOW C.C. (a) 246 houses on Areas D4, R4 and Part Area O4, at Unit No. 4, Castlemilk. (b) Architectural and Planning Department, 20, Trongate, Glasgow, C.1. (d) Aug. 25.

* * *

SCOTLAND—KINCARDINE C.C. (a) Erection of 50 houses at Porthleven Station, near Aberdeen. Separate trades. (b) County Architect, 34, Market Square, Stonehaven. (e) Sept. 5.

* * *

SCOTLAND—PAISLEY CORPORATION. (a) Erection of 83 houses and 16 shops for first stage of George Street-Canal Street redevelopment area. (b) Burgh Engineer, 14, Gilmour Street, Paisley.

* * *

SOUTHPORT B.C. (a) Conversion of No. 69, Albert Road, Southport, to form 5 flats. (b) Borough Architect, 99-105, Lord Street. (c) 2gns. (e) Aug. 26.

* * *

WARWICK R.C. (a) Erection of 24 dwellings, with paths, drains and fences, at Radford Semele, near Leamington Spa. (b) Council's Clerk, Council Offices, Waterloo Place, Leamington Spa. (c) 2gns. (d) Aug. 17.

* * *

WELSHPOOL B.C. (a) Erection of 20 houses, with roads, sewers and footpaths at Guilsfield. (b) Messrs. D. Mervyn Edwards and Moreton, 5, Lower Brook Street, Oswestry. (c) 3gns. cheque payable to Council. (e) Aug. 24.

* * *

WEST RIDING STANDING JOINT COMMITTEE. (a) Erection of (1) police house and garage at Malt Kiln Lane, Appleton Roebuck, (2) police house and office at New Road, Middlestown, (3) police house at St. John's Street, Horbury Bridge, (4) police house at Bradford Road, Oakenshaw, Cleckheaton, (5) pair of houses at Turnsteads Avenue, Cleckheaton, (6) 2 houses with office at New Road, Mytholmroyd, (7) house with office, and a house at Main Street, Burley-in-Wharfedale, (8) house with office at Village Street, Norwood Green, Brighouse, (9) house with office at Long Lane, Clayton West. (b) County Architect, "Bishopgarth," Westfield Road, Wakefield. (c) 2gns. (e) Sept. 2.

* * *

YORK C.C. (a) 42 dwellings at Thanet Road-North Lane site. (b) City Architect, 8, St. Leonard's Place. (c) £1. (e) Sept. 5.

MISCELLANEOUS

WARWICKSHIRE C.C. The Council is preparing an approved list of contractors for maintenance and new building works. Applications for works costing between (1) £10,000 and £25,000, (2) £25.000 and £50,000, and (3) in excess of £50.000, to County Architect, Shire Hall, Warwick, by August 31st, with particulars of recent contracts executed.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. †denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

ST. PANCRAS B.C. (1) 62 flats, public house, 6 shops. (2) Goldington Crescent. (3) Direct Labour. (4) £217,985. (1) 12 flats. (2) Arlington Road. (3) Building Manager's tender. (4) £34,875.

• • •

LIVERPOOL CORPORATION. (1) 69 dwellings. (2) Mather Avenue. (3) Unit Construction Co., Ltd., Speke Boulevard, Liverpool. (4) £98,379.

• • •

HARROW B.C. (1) 57 houses. (2) Brookside Estate. (3) Circle Construction Co., Ltd., Wembley Hill, Middlesex. (4) £96,951.

• • •

WORCESTERSHIRE C.C. (1) Extensions. (2) Tenbury secondary school. (3) Spicers (Builders), Ltd., Ombersley Road, Worcester. (4) £35,320.

• • •

BIRMINGHAM. (1) Extensions to Medical School. (2) Birmingham University. (3) Wm. Sapcote and Sons, Ltd., 87, Camden Street, Birmingham.

• • •

LIVERPOOL REGIONAL HOSPITAL BOARD. (1) Second stage of extensions. (2) Clattersbridge Hospital. (3) Lloyd and Cross, Ltd., Argyle Street, Birkenhead. (4) £59,502.

• • •

LONDON E.C. (1) Reconstruction of Chapter House. (2) St. Paul's Cathedral. (3) Walter Lawrence and Son, Ltd., Sun Street. Finsbury, E.C.2. (4) Cost: £80,000.

• • •

LONDON COUNTY COUNCIL. (1) 30 blocks of flats, maisonettes, shops, 12 houses. (2) St. Martin's Estate (Upper Tulse Hill site), Lambeth. (3) E. H. Smith (Croydon), Ltd., 48, Wellesley Road, Croydon. (4) £1,078,032. (1) 36 old people's dwellings. (2) Watling Estate, Hendon. (3) J. M. Hill and Sons, Ltd., Wembley. (4) £53,277. (1) Adaptation of Ditton Place. (2) Balcombe, Sussex. (3) Y. J. Lovell and Son, Ltd., Horsham. (4) £40,589. (1) Blocks of dwellings. (2) Waltham Estate, Lambeth. (3) G. Ward (Ealing), Ltd., Uxbridge Road, W.13. (4) £50,669. (1) Blocks of dwellings. (2) Kender Estate, Deptford. (3) Rowley Bros., Ltd., Tottenham, N.17. (4) £82,138.

Entrance at 5-6 Crosby Sq., London, E.C.3.
designed by the Estate Department of
Shell Petroleum Co., Ltd

OFFICIAL ANNOUNCEMENTS

APPOINTMENTS • CONTRACTS • TENDERS

Rate 1/6 per line, minimum 3/- *Close for press 1st post Monday for following Thursday Issue*

APPOINTMENTS

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order, 1952.

HARLOW DEVELOPMENT CORPORATION.

Architect Planner: Frederick Gibberd, C.B.E., F.R.I.B.A., M.T.P.I.
Executive Architect: Victor Hamnett, B.Sc., A.R.I.B.A., A.R.I.C.S., A.M.T.P.I.

ASSISTANT ARCHITECTS, GRADE V(b), £565 × £30—£715 per annum for New Town work. Minimum standard Intermediate R.I.B.A. Superannuation. Accommodation available in due course in suitable cases.

Detailed applications with names of two referees to General Manager, "Terlings," Harlow, Essex, within 14 days. [1361

COUNTY BOROUGH OF GRIMSBY.

BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT.

JUNIOR ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for the appointment of a Junior Architectural Assistant in the Architectural Section of the above Department in accordance with present Conditions of Service and scale of salary of the National Joint Council for A.P.T. Grade II (salary £560-£640 per annum).

The appointment is terminable by one month's notice on either side and is subject to the provisions of the Local Government Superannuation Acts. The successful candidate will be required to pass a medical examination.

Applications stating age, whether married or single, qualifications and details of training and experience, together with copies of two recent testimonials, must be suitably endorsed and delivered to the under-signed not later than first post on Monday, August 29th, 1955.

J. V. OLDFIELD,
Borough Enginer & Surveyor.

Municipal Offices,
Town Hall Square,
GRIMSBY.
August, 1955. [1387

CHESHIRE COUNTY ARCHITECT'S DEPARTMENT.

APPLICATION forms for appointment of ARCHITECTURAL ASSISTANTS in the following grades may be obtained from me and should be returned completed by September 5, 1955.

Grade A.P.T. IV, £675 × £30—£825.
Grade A.P.T. III, £600 × £25—£725.
Grade A.P.T. II, £560 × £20—£640.

E. MAINWARING PARKES, F.R.I.B.A.,
County Architect.

The Castle,
CHESTER. [1393

CITY OF BIRMINGHAM.

CITY ARCHITECT'S DEPARTMENT

APPLICATIONS are invited for the appointment of an ASSISTANT ARCHITECT in the Housing Design Section which is responsible for a large housing programme for suburban and central redevelopment areas, including multi-storey flats of both traditional and new-traditional construction, garages and large shopping centres.

The appointment will be within Grade A.P.T. IV (£675/£825 per annum) at a commencing salary according to experience.

Applicants must be Associate Members of the R.I.B.A. or hold an equivalent qualification.

The post is permanent, superannuable, subject to a medical examination, and to one month's notice on either side.

Applications, endorsed with the heading of the post, stating age, present position and salary, qualifications and experience, together with the names of two persons to whom reference can be made, should reach the undersigned not later that August 31, 1955.

Canvassing disqualifies.

A. G. SHEPPARD FIDLER.

Civic Centre,
Birmingham, 1. [1407

APPOINTMENTS—contd.

COUNTY BOROUGH OF GRIMSBY.

BOROUGH ENGINEER & SURVEYOR'S DEPARTMENT.

SENIOR QUANTITY SURVEYOR.

APPLICATIONS are invited for the appointment of a Senior Quantity Surveyor on the permanent establishment of the above department. Salary Grade A.P.T. IV—£675-£825 per annum.

The appointment will be subject to the conditions of service of the National Joint Council, terminable by one month's notice on either side and to the provisions of the Local Government Superannuation Acts. The successful candidate will be required to pass a medical examination.

HOUSING ACCOMMODATION WILL BE MADE AVAILABLE TO THE SUCCESSFUL APPLICANT, IF MARRIED.

Applications stating age, whether married or single, qualifications and details of training and experience, together with copies of two recent testimonials, must be suitably endorsed and delivered to the under-signed not later than first post on Monday, August 29th, 1955.

J. V. OLDFIELD,
Borough Enginer & Surveyor.

Municipal Offices,
Town Hall Square,
GRIMSBY.
August, 1955. [1388

KINGSWOOD URBAN DISTRICT COUNCIL.

APPLICATIONS are invited for the following appointments in the department of the Engineer and Surveyor:—

1. Architectural Assistant.

A.P.T. Grade III (£600-£725). Applicants must have passed the Intermediate Examination of the R.I.B.A. and preference will be given to those who have reached an advanced stage in the preparation for the Final Examination. Applicants should have had considerable municipal experience in the preparation of sketch schemes and working drawings for houses, flats, public buildings and general architectural work.

2. Assistant Engineer.

A.P.T. Grade III (£600-£725). Applicants must have passed the Intermediate Examination of the Institution of Municipal Engineers or Institution of Civil Engineers and preference will be given to those who have reached an advanced stage in the completion of the Final Examination. Applicants should have had considerable experience in the preparation of road and sewerage schemes particularly in the development of extensive housing estates, and in general municipal engineering works.

3. Assistant Engineer/Architect.

A.P.T. Grade III (£600-£725). Applicants should possess the qualifications and experience described in Vacancy No. 2 and in addition should have had experience in architectural works in connection with the development of housing estates. Possession of the Intermediate examination of the R.I.B.A. or Royal Institution of Chartered Surveyors (Building Sub-Division) would be an added advantage.

The posts will be in respect of the Council's Capital Programme and subject to the National Scheme of Conditions of Service and the successful applicant will be required to pass a medical examination.

Housing accommodation will be provided for the successful applicant, if necessary.

Further details of the appointments setting out information to be supplied by applicants may be obtained from W. E. H. Rendle, M.I.Mun.E., A.R.I.C.S., M.Inst.H.E., Engineer and Surveyor, Council Offices, Kingswood, Bristol. Applicants should state the vacancy for which they are applying.

Applications with names and addresses of three referees should be sent to the undersigned not later than August 20th, 1955.

I. H. DEARNLEY,
Clerk of the Council.

Council Offices,
Kingswood,
Bristol. [1385

APPOINTMENTS—contd.

BOROUGH OF MIDDLETON.

APPLICATIONS are invited for the appointment of ARCHITECTURAL ASSISTANT within A.P.T. IV (£675-£825).

Candidates must have had satisfactory experience and have passed the final examination of the R.I.B.A.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937-53, and to the National Scheme of Conditions of Service, and the successful candidate passing a medical examination. The appointment will be terminable by one month's notice on either side.

The Council will consider the provision of suitable housing accommodation (if necessary) for the successful candidate.

Applications, suitably endorsed, stating age, experience and qualifications, together with names of two referees, to be delivered to the undersigned not later than Saturday, August 27th, 1955.

Canvassing, directly or indirectly, will be a disqualification.

F. JOHNSTON,
Town Clerk.

Town Hall,
Middleton,
Lancs.
August, 1955. [1398

BOROUGH OF SHREWSBURY.

APPOINTMENT OF JUNIOR ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for the post of JUNIOR ARCHITECTURAL ASSISTANT on the permanent staff of the Borough Surveyor at a salary in accordance with Grade II (£560-£640) per annum.

Applications, including the names and addresses of two referees, should be sent to the Borough Surveyor not later than Friday, August 26, 1955.

S. R. H. LOXTON,
Town Clerk.

August 2, 1955. [1404

COUNTY BOROUGH OF EAST HAM.

QUANTITY SURVEYOR—GRADE II, £560—£640.

LONDON Weighting is paid in addition. Salary in excess of the minimum may be paid according to qualifications and experience.

A subsistence allowance may be granted over a reasonable period to the person appointed if unable to obtain suitable housing accommodation, necessitating the maintenance of two homes.

Further details and application forms returnable by August 26, 1955, from the Town Clerk, Town Hall, East Ham, E.6. [1413

CWMBRAN DEVELOPMENT CORPORATION.

Appointment of ASSISTANT ARCHITECTS.

APPLICATIONS are invited for two superannuable posts as ASSISTANT ARCHITECTS in my Department.

The salary range will be £760 × £25—£885 p.a. and the commencing salary will be in accordance with the qualifications and experience of the successful candidates.

Applicants must be Associates of the R.I.B.A. with not less than four years' office experience, and should have had good experience in house design, construction and layout.

Housing accommodation will be made available in suitable cases, or otherwise lodging expenses in accordance with the Corporation's scale will be paid to married men for a limited period.

Applications, stating age, experience, details of present and former employment (together with applicable salaries) and the names and addresses of two referees, must reach the undersigned by first post on 1st September, 1955.

J. C. P. WEST, A.R.I.B.A., M.T.P.I.,
Chief Architect.

Victoria Street,
Cwmbran,
Mon.
3rd August, 1955. [1400

APPOINTMENTS—contd.

LONDON COUNTY COUNCIL

REQUIRES:—

(i) LANDSCAPE ASSISTANTS, (ii) ARCHITECTURAL ASSISTANTS and (iii) BUILDING SURVEYOR'S ASSISTANTS for preparation of working drawings, schedules, specifications and supervision of contract work for reinstatement, landscaping and building work in parks, gardens and open spaces.

Salaries up to £783 a year according to quals. and expce.

Extensive programme of layouts for new parks, school grounds, housing estates, etc., provides exceptional opportunities for those desiring to widen their expce. in this field and in architectural work in assoc. with landscaping.

Application forms from the Chief Officer of the Parks Department, Old County Hall, Spring Gardens, S.W.1. (Whitehall 3121, Ext. 33.) (1260.) [1409

HAMPSHIRE.

APPLICATIONS are invited for the appointment of two ASSISTANT ARCHITECTS, Grade IV (£675-£825) in the County Architect's Department. Candidates must be Registered Architects, preferably A.R.I.B.A., with good general experience in the design and construction of Public Buildings.

The appointments are pensionable, subject to satisfactory medical report, and will be terminable by three months' notice on either side. In approved cases the County Council is prepared to assist in meeting removal and other expenses.

Application forms obtainable from the County Architect, The Castle, Winchester, should be returned to him by the 24th August. [1403

PADDINGTON BOROUGH COUNCIL.

REQUIRE SENIOR ASSISTANT ARCHITECT within A.P.T. Grade V (£780×£30—£930 p.a. £10 p.a. less if under age 26 years). Candidates must be A.R.I.B.A. with experience of local authority work, contemporary design and construction of general municipal work including multi-storey flats; supervision of large building contracts and architectural staff; Town Planning experience an advantage.

Applications stating age, qualifications, present and past appointments with dates and salaries, details of experience and names and addresses of three referees should be received by the undersigned by August 29, 1955 (quoting A.229).

W. H. BENTLEY,
Town Clerk.

Town Hall,
Paddington Green, W.2. [1408

TENDERS

COUNTY BOROUGH OF BRIGHTON.

TENDERS are invited for:—

THE ERECTION OF HOUSES AT NORTH WOODINGDEAN.

1. SECTION 13. 27 HOUSES.
2. SECTION 16. 31 HOUSES.
3. SECTION 17. 10 HOUSES.

Bills of Quantities and Forms of Tender may be obtained from the Borough Engineer & Surveyor, 26/30, King's Road, Brighton, on or after 8th August, 1955, on receipt of a returnable deposit of £2 2s for each section.

Tenders are to be delivered to the Town Clerk not later than 12 noon on Tuesday, 30th August, 1955.

W. O. DODD,
Town Clerk.
[1397

EDUCATIONAL

I.A.A.S.

FORTHCOMING EXAMINATIONS.

THE Incorporated Association of Architects and Surveyors will hold the following examinations during the week beginning 21st November, 1955:—

QUANTITY SURVEYORS SECTION:
- Intermediate grade (Relegations only).
- Final grade—Part I (Relegations only).
- Final grade—Part II.
- Direct Final grade (Relegations only).

BUILDING SURVEYORS SECTION:
(Including Municipal)
- Intermediate grade (Relegations only).
- Final grade—Part I (Relegations only).
- Final grade—Part II.
- Direct Final grade (Relegations only).

The examinations will be held in London and at selected provincial centres. Applications from candidates for permission to sit, made on the prescribed form, must be received not later than Monday, 29th August, 1955.

Full information on application to the General Secretary, I.A.A.S., 75, Eaton Place, London, S.W.1. [1236

MISCELLANEOUS SECTION

RATE: 1/6d. per line, minimum 3/-, average line 6 words. Each paragraph charged separately.

BOX NOS. add 2 words plus 1/- for registration and forwarding replies which should be addressed c/o, "The Architect & Building News," Dorset House, Stamford Street, London, S.E.1.

PRESS DAY Monday. Remittances payable to Iliffe & Sons Ltd., Dorset House, Stamford Street, London, S.E.1.

No responsibility accepted for errors.

ARCHITECTURAL APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order, 1952.

RAMSEY, MURRAY & WHITE have vacancy for—
ARCHITECTURAL ASSISTANT, about intermediate standard, preferably with office experience.
Salary according to qualifications.—Apply 32, Wigmore St., London, W.1, or Telephone Welbeck 1409. [0984

ARCHITECTURAL Assistant required. Inter. standard or qualified; small office; salary by arrangement.—Tel. Gro. 4510. [1410

ARCHITECTS' Co-Partnership require qualified assistant.—Tel. Langham 5791 or write 44, Charlotte St., W.1. [1402

J. M. AUSTIN-SMITH & PARTNER require Architectural Assistant, Intermediate or Final standard with some office experience.—Apply giving full particulars to 29, Sackville Street, W.1. [1390

OFFICE facilities and salary offered to Senior Assistant in return for part-time assistance with newly formed London practice.—Box 5678, c/o A. & B. N. [1405

ASSISTANT required in busy practice in West End, in early twenties, about intermediate R.I.B.A. standard; excellent opportunities for gaining all round experience.—Box 3851, c/o A. & B.N. [0636

REQUIRED, Architectural Assistant conversant with general contemporary work, able to prepare working drawings from sketches.—State age, experience and salary required to Reeve, Reeve & Shea, 6, Cecil Sq., Margate. [1412

ASSISTANT, about Intermediate R.I.B.A. Standard, wanted for small office concerned with good-class small jobs besides Schools. S.E. London.—Telephone Foots Cray 3166-7 for interview. [1394

CITY firm have vacancy for well-educated keen young Draughtsman wishing to enter the Architectural profession. Must be attending a recognised course.—Box 5622, c/o A. & B. N. [1391

ARCHITECTURAL Assistant with at least 3 years drawing office experience required by City firm. Knowledge of industrial and commercial buildings an advantage. Good salary and prospects.—Box 5621, c/o A. & B. N. [1392

SENIOR Assistant Architects for interesting work required in London office, used to detailing of large buildings and site supervision; liberal remuneration in accordance with experience; no Saturdays.—Write to Box 5683, c/o A. & B.N. [1411

ARCHITECTURAL Assistant urgently required. Intermediate stage or above and with practical experience particularly in traditional domestic and other work.—Please write stating age, experience and salary required to Alleyn & Mansel, 1a, Berners Street, London, W.1. [0004

ARCHITECTURAL assistants, also draughtsmen required for work on new system of prefabrication for schools, hospital buildings, etc.; permanency; superannuation scheme available.—Write or telephone, stating age, experience, salary required, J. Thorn & Sons, Ltd., Brampton Rd., Bexleyheath, Kent. (Tel. 305.) [1401

ARCHITECT'S ASSISTANT required for the London office of a firm of Architects with interests throughout the country, must be of Intermediate to Final R.I.B.A. standard. Superannuation scheme.—Apply in writing to Messrs. Cotton, Ballard & Blow, 133a, Wembley Park Drive, Wembley, Middlesex. [0007

QUALIFIED ASSISTANT, 25-32, with some practical design and structural experience, preferably also in exhibition work: good, quick draughtsmanship and perspectives; salary by arrangement.—Apply by letter to S. P. Jordan, A.R.I.B.A., M.S.I.A., Dip.T.P., 11, King's Road, Sloane Square, S.W.3. [1376

ARCHITECTURAL APPOINTMENTS VACANT—contd.

ARCHITECTURAL ASSISTANTS required for Coventry and London. All Grades. These positions offer excellent experience in wide variety of work, with salaries closely related to capabilities and reviewed September annually. Pension scheme available. Travelling expenses paid to applicants selected for interview.—W. S. Hattrell & Partners, 1, Queens Road, Coventry, and 14, Hanover Square, London, W.1. [1389

SITUATIONS VACANT

QUANTITY SURVEYOR—qualified, required by a large building contractor to handle modern factory development schemes. Staff appointment. —Box 5645, c/o A. & B.N. [1396

CLERK of Works required in Cambridge, experience in reinforced concrete work essential. Initial contract of two years. Salary up to £900 per annum.—Apply Box 5677, c/o A. & B. N. [1406

REQUIRED immediately by industrial design organization, Draughtsman to work on various projects including shops.—Please apply, stating previous experience and salary required, to Box 5644, c/o A. & B.N. [1395

SERVICES OFFERED

FRENCH Polishing Contractors. All classes, shopfittings, furniture, etc. Competent workmen. Apply J. B. Howes, 41, Clifton Road, Hornsey, N.8. Mou. 5156. Fin. 3049 (evenings). [1341

GOOD lettering is essential for commemorative wall tablets, foundation stones, etc. Designs prepared and estimates given for the finished work in any suitable material. Renowned as a centre for lettering since 1934. Sculptured Memorials, 67 Ebury Street, S.W.1. Sloane 6549. [0236

ARCHITECTS, Surveyors and Contractors.—Our drawing office service is always available for the preparation of plans, designs, sketches, tracings and prints of houses, bungalows, stores, shops, structural alterations, furniture, interior decorations, signs and landscape gardens. Surveys, with photography at any distance. Materials supplied, charges moderate, monthly accounts, strict privacy guaranteed. Quotations if required.—Allerton Studios, Designers and Draughtsmen, 14, Maley Avenue, S.E.27. Gip. 3782. [0141

FOR SALE

COTSWOLD Building Stone & Hardcore for sale at Fish Hill Quarry, Fish Hill, near Broadway, Worcs.

DELIVERED or collected from Quarry.

APPLY to: Baillie, Brind & Co., Ltd., Prudential Chambers, Banbury, Oxon. [0082

ALL hardwood mouldings, plain and embossed, embossed ornaments and dowels; send for catalogue and to-day's lowest trade prices.—Dureve's Moulding Mills, Ltd., 60, Pownall Road, Dalston, E.8. Clissold 1543/4. [0142

JOINTLESS composition flooring in attractive colour range—quotations free.—Full particulars from the Liotex Asbestos Flooring Co., Ltd., 3, Corbetts Passage, London, S.E.16 (Dept. A). Bermondsey 4341-2-3. [0622

RECONDITIONED ex-Army Huts & Manufactured Buildings. Timber, Asbestos, Nissen Type, Hall Type, etc. All sizes and prices. Write, call or telephone, Universal Supplies (Belvedere), Ltd., Crabtree Manorway, Belvedere, Kent. Tel.: Erith 2948. [0005

BUSINESS & PROPERTY

CHEAM.—Drawing office and offices to let; self-contained first floor; 1,200 sq ft; double aspect lighting; rent £430 p.a.; excl. lease.—Apply Parkins & Co., 1, Ewell Rd., Cheam. Vigilant 4408-9. [1399

BOOKS, ETC.

"STEELS in Modern Industry: A Comprehensive Survey by 29 Specialist Contributors." General Editor: W. E. Benbow. An invaluable guide for engineers, designers and draughtsmen; it specifies the steels best used in various engineering applications (bearing in mind the present need for economy), describes their general and special properties and characteristics, and how they may be surface finished for anti-corrosive and other purposes. 42/- net from all booksellers. By post 43/2 from The Publishing Dept., Dorset House, Stamford St., London, S.E.1.

INDEX TO ADVERTISERS

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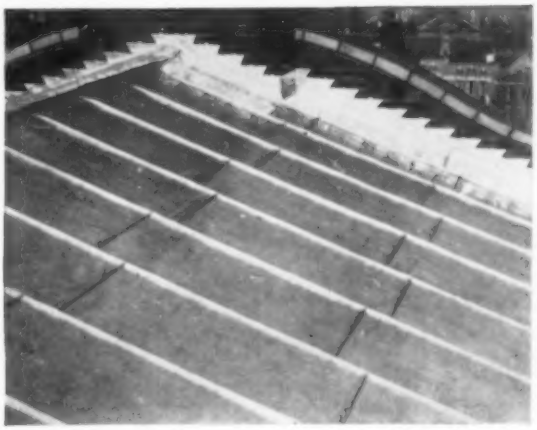
Super Purity (99·99%) Aluminium

for roofing, flashings and weatherings



Case history No. 4

Architects :
London County Council Architect's Department

Contractors :
Whyatt (Builders) Ltd.

Roofing Contractors :
Builders Iron & Zincwork Ltd.

Details :
Westhills School, Wandsworth.
Pitched roof, dormers and flashings in 22 s.w.g. Super Purity Aluminium. Completed 1952.

Super Purity Aluminium is a plumber's metal; 99.99% pure and the most ductile and workable form of aluminium obtainable. It is a permanent roofing material which costs considerably less than the more traditional plumber's metals, although it is capable of lasting just as long. Super Purity is particularly adaptable to school roofs both from the economical and the practical point of view.

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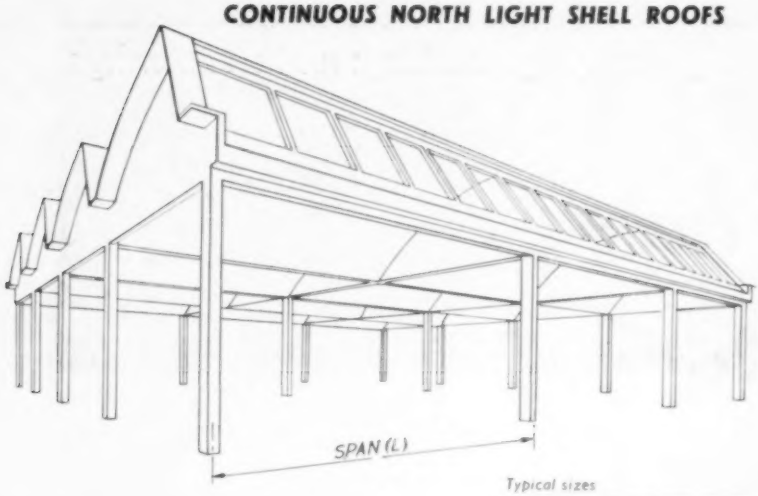
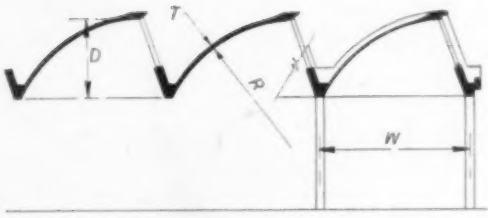
CONTINUOUS NORTH LIGHT SHELL ROOFS





Typical sizes

Span (L)	Width (W)	Depth (D)	Radius (R)	Thickness (T)
40′ 0″	20′ 0″	Depending on window	15′ 0″	2½″
50′ 0″	20′ 0″		15′ 0″	2½″
60′ 0″	20′ 0″		15′ 0″	2½″
70′ 0″	30′ 0″		20′ 0″	3″
80′ 0″	30′ 0″		20′ 0″	3″

Amongst many other advantages, the use of shell concrete construction enables large areas to be spanned with relatively few supports. Illustrated is a factory in which north light continuous shells were used. The BRC booklet, 'Shell Concrete Construction,' outlines the scope of this form of construction and is available to architects and engineers on request.

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BRC

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